# Offshore Information for Area Contingency Planning

Arctic and Western Alaska

#### Offshore Environmental Sensitivity Index (ESI) Atlas for Cook Inlet

Technical Document #6B
March 2024

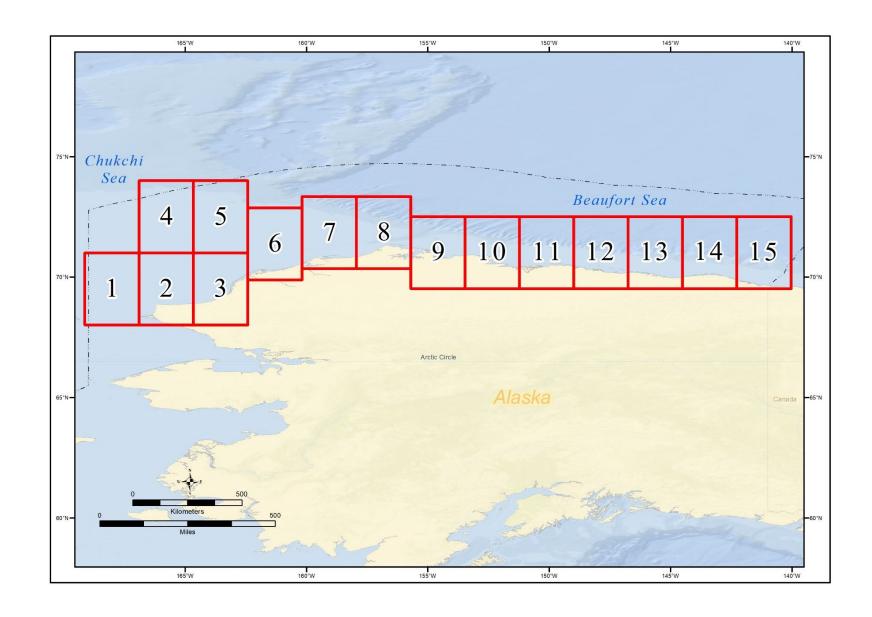
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# Arctic Alaska Chukchi and Beaufort Seas Offshore Environmental Sensitivity Index Maps

A Guide to Marine Resources at Risk to Spilled Oil







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Bowhead Whales - National Oceanic and Atmospheric Association (NOAA) website

(Source: https://www.fisheries.noaa.gov/alaska/marine-mammal-protection/bowhead-whale-research-alaska)

Spectacled Eider - photograph taken by Laura L. Whitehouse/USFWS

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Beluga Mother and Calf - NOAA Fisheries

(Source: https://www.fisheries.noaa.gov/feature-story/new-model-predicts-potential-effects-prey-availability-and-human-activities-pregnant)

King Eider - photograph taken by Alan Schmierer

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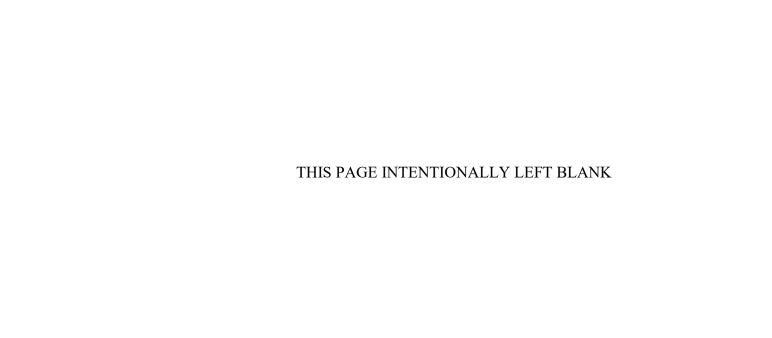
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#### Arctic Alaska Chukchi and Beaufort Seas Offshore Environmental Sensitivity Index Maps

A Guide to Marine Resources at Risk to Spilled Oil

#### TABLE OF CONTENTS

INTRODUCTION	ii
SENSITIVE BIOLOGICAL RESOURCES	ii
BIRDS	iii
FISH	iv
INVERTEBRATES	iv
MARINE MAMMALS	iv
BENTHIC HABITATS	V
GEOGRAPHIC INFORMATION SYSTEM	vi
ACKNOWLEDGMENTS	vi
APPROPRIATE USE OF ATLAS AND DATA	vi
SPECIES LIST	vii
ENVIRONMENTAL SENSITIVITY INDEX MAPS	
Biology Map 1	1
Biology Map 2	
Biology Map 3	5
Biology Map 4	7
Biology Map 5	9
Biology Map 6	11
Biology Map 7	12
Biology Map 8	15
Biology Map 9	17
Biology Map 10	19
Biology Map 11	21
Biology Map 12	23
Biology Map 13	25
Biology Map 14	27
Biology Map 15	29



#### Arctic Alaska Chukchi and Beaufort Seas Offshore Environmental Sensitivity Index Maps

A Guide to Marine Resources at Risk to Spilled Oil

#### INTRODUCTION

Environmental Sensitivity Index (ESI) maps have been developed for federal waters of the Arctic Alaska - Chukchi and Beaufort Seas.

The ESI atlas is a compilation of information on sensitive biological resources. Though the data will be useful for many natural resource applications, the goal of the ESI data is to present a concise summary of resources that may be particularly vulnerable to spilled oil. The intent of the data should caveat other uses. As an example, the ESI is not intended to present a catalog or comprehensive listing of species present in an area, rather the focus is on species and/or life stages particularly sensitive to oiling.

#### SENSITIVE BIOLOGICAL RESOURCES

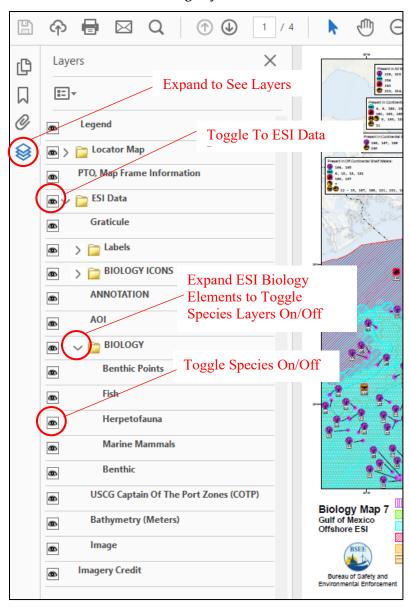
Biological information presented in this atlas was collected, compiled, and reviewed with the assistance of biologists and resource managers from the following agencies:

- Alaska Ocean Observing System (AOOS)
- Audubon Alaska
- Duke University, Marine Geospatial Ecology Lab
- Duke University, Nicholas School of the Environment
- NOAA Deep Sea Coral Research and Technology Program (DSCRTP)
- NOAA Fisheries (National Marine Fisheries Service (NMFS))
- NOAA Fisheries, Alaska Fisheries Science Center, Marine Mammal Laboratory, Cetacean Assessment and Ecology Program
- NOAA NMFS Alaska Regional Office
- Sea Duck Joint Venture
- United States Fish and Wildlife Service (USFWS)
- USFWS, Marine Mammals Management, Region 7
- United States Geological Survey (USGS) Alaska Science Center
- University of Texas
- University of Washington, Cooperative Institute for Climate, Ocean, and Ecosystem Studies (CICOES)
- University of Washington, School of Fisheries and Aquatic Sciences

The above organizations provided much of the biological information included in the atlas. Other participating organizations are featured in the sources table and cited in the metadata accompanying the digital product.

The biological resources shown in this atlas were extracted from the ESI GIS data compiled for this region. The biological resources shown on these maps are "layered" in the PDF maps. This allows the user to turn on or off the biological features to create thematic maps or to see more clearly overlapping polygons. Narrative species/taxa profiles that include range maps made from the ESI data accompany this atlas. The range maps in the profiles are layered PDF files, which allow the user to turn on or off selected data layers.

#### General Instructions on Using Layered PDF



#### **Key Features On ESI Maps**

- Animal and plant species that are at risk during oil spills and/or spill response are represented in the database by polygons and points.
- Species have been divided into groups and subgroups based on their behavior, morphology, taxonomic classification, and spill vulnerability and sensitivity. The icons below reflect this grouping scheme.
- 3) There is a Resources at Risk number (RAR#) associated with each polygonal or point feature. The RAR# references a table in the database that contains species names (common and scientific) associated with the feature.



- 4) Also associated with each species in the table is the federal (F) protected status as threatened (T) or endangered (E) under the Endangered Species Act (ESA) represented on the maps as a red box around the subelement icon shown above, as well as concentration, seasonality, and life-history information. Federal listings were provided by NMFS and USFWS.
- 5) The table includes a Mapping Qualifier with each species record (see table of mapping qualifiers and guidelines below). The mapping qualifier should help users understand vulnerabilities associated with the map data.
- 6) Feature-level source information is included for each species within each RAR#, meaning there is a link to a table containing Geographic (G) and Seasonality (S) sources. Full bibliographic information is included for each source in the sources table.

- Additionally, feature information is included in the GIS database used to create these maps. The GIS data also provide the extent polygons or points for all mapped features; it can be queried, filtered, and used with other GIS datasets.
- 7) The text in the Present Throughout Box (PTO) describes how the general geographic location is determined for the PTO boxes displayed on the ESI maps. The individual species status (threatened/endangered) is the primary filtering criteria for determining what is displayed on the maps versus what is put in the PTO box. Not every species with a status will be shown on the map and may be shown in the PTO box. Additional filtering for PTO includes the spatial extent of the species or species assemblage polygons relative to the area displayed on each map. The purpose of the PTO box is to declutter the map and increase readability.

#### Mapping Qualifiers and Guidelines

Element	Qualifier	Guidelines
Benthic	Concentration	Areas where concentrations are
	Area	considerably higher than other
		records of the same species in
		the AOI. Completion of the
		concentration field is mandatory
Bird	Composition	for records with this qualifier.
Bird	Concentration	Areas where concentrations are
	Area	considerably higher than other
		records of the same species in
		the AOI. Completion of the concentration field is mandatory
		for records with this qualifier.
		May be used when other
		qualifiers do not apply. May
		indicate concentrations for
		foraging or other activities not
		covered by other qualifiers.
Invert	Concentration	Areas where concentrations are
	Area	considerably higher than other
		records of the same species in
		the AOI. Completion of the
		concentration field is mandatory
		for records with this qualifier.
M_Mammal	Concentration	Areas where concentrations are
	Area	considerably higher than other
		records of the same species in
		the AOI. Completion of the
		concentration field is mandatory
		for records with this qualifier.
Bird	General	Used for broad, general
	Distribution	distributions of species that are
		often mapped to landscape- or
		habitat-scale features (e.g., bays
		or marshes); may or may not
		include specific life history
T: -1.	C 1	information.
Fish	General Distribution	Used for broad, general
	Distribution	distributions of species that are
		often mapped to landscape- or habitat-scale features (e.g., bays
		or marshes). May or may not
		include specific life history
		information.
Invert	General	Used for broad, general
,	Distribution	distributions of species that are
		often mapped to landscape- or
		habitat-scale features (e.g., bays
		or marshes); may or may not
		include specific life history
		information.
M_Mammal	General	Used for broad, general
	Distribution	distributions of species that are
		often mapped to landscape- or
		habitat-scale features (e.g., bays
		or marshes); may or may not
		include specific life history
		information.
M_Mammal	Migration	Potential or known mammal
M_Mammal	Migration	Potential or known mammal migration corridors in the

Element	Qualifier	Guidelines
Bird	Rafting	Similar to 'Concentration Area'
		qualifier, but specific to large,
		on-water concentrations.
Benthic	Vulnerable	Intended for records of rare
	Occurrence	species with discrete
		occurrences, where the
		conservation value of the species
		should be highlighted for spill
		response. Can also be used for
		T/E records that are not mapped
		as a general distribution of the
		species.
M_Mammal	Vulnerable	Intended for records of rare
	Occurrence	species with discrete
		occurrences, where the
		conservation value of the species
		should be highlighted for spill
		response. Can also be used for
		T/E records that lack discrete life
		history information or for T/E
		records that are not mapped as a
		general distribution of the
		species.

#### **Present Throughout Box (PTO)**

PTO Designation	Description
Present In All Water	Species or species assemblage polygons that cover most if not all water in the AOI for a map.

#### **Birds**

Birds displayed in this atlas include alcids, diving birds, gulls, terns, pelagic birds, shorebirds, and waterfowl. Species that are conservation priority are specifically emphasized, including two ESA-listed species: spectacled eider (FT) and Steller's eider (FT). Bird occurrence information displayed in this atlas is based on information gathered via phone/email correspondence with resource experts, and hardcopy and digital sources; key data sets are listed below and included in the metadata. This atlas represents offshore waters, so while no birds are technically nesting within the AOI, several species are nesting on land and on islands in proximity to the AOI. Therefore, some nesting seasonalities are included to highlight this critical life-history stage where appropriate.

North Pacific Pelagic Seabird Database (NPPSD): For general distribution coverage of seabirds in the AOI, data from the NPPSD were used. The NPPSD is a USGS-maintained database that contains point locations of survey transect data that censused seabirds at sea. NPPSD records were clipped to the Arctic AOI, and species frequencies from 2000 to present within the AOI were computed. Seabird species with frequencies in the 10s or greater were included in the ESI, with concentration values listed by order of magnitude of record frequency (e.g., "10s", "100s", "1000s", or "10,000s").

Sea Duck Key Habitats Atlas: This atlas describes sites throughout North America that constitute important sea duck habitats. Criteria for inclusion in this atlas were strict, to highlight those habitats most critical to sea ducks during at least one season. Two sites fell within the Arctic Alaska - Chukchi and Beaufort Seas AOI: the Ledyard Bay site and offshore portions of the Beaufort Sea Coastal Lagoons site (most of which falls inshore of the AOI). Ledyard Bay includes nearand offshore coastal waters between Cape Lisburne and Icy Cape on the Arctic coast of Alaska. This remote marine site on the eastern edge of the Chukchi Sea provides shallow (<30 m) water staging and molting habitat for a variety of sea duck species. The coastal waters of Ledyard Bay provide critical staging habitat for all four eider species, including important staging and molting habitat for spectacled eiders (FT) breeding on the Arctic coastal plain of Alaska. The Beaufort Sea Coastal Lagoons habitat site encompasses a narrow strip of Alaska's Arctic coastline from Icy Cape on the Chukchi Sea eastward along the Beaufort Sea to the Canadian border. This site provides important habitat for molting sea ducks, particularly longtailed ducks.

Audubon Important Bird Areas: The Important Bird Area (IBA) Program is a global effort to identify and conserve areas that are essential habitat for birds at global, continental, and state scales. Alaska IBAs are relied on for breeding, nesting, foraging, molting, resting, staging, and/or migration. Alaska IBAs that fell within the Arctic Alaska - Chukchi and Beaufort Seas AOI include: Lisburne Peninsula Marine, Ledyard Bay to Icy Cape, Chukchi Sea Nearshore, Barrow Canyon and Smith Bay, Beaufort Sea Shelf Edge, and Beaufort Sea Nearshore.

Note that species composition within polygons and particularly concentration values are based on model or other results using observations made over multi-year periods and are not meant to accurately reflect 'current' conditions in the case of an event. Survey and modelling limitations, weather, and other ecological factors contribute to bird concentrations at any given time. Also, note that bird concentrations vary throughout the periods listed in the seasonality table. Please contact resource experts in the event of a spill or if data are to be used for any reason other than spill planning or response.

Expert contacts for Arctic (Chukchi and Beaufort Seas) birds\* are:

Name	Agency	City	Phone/ Email	Species
Mayumi Arimitsu	USGS	Juneau, AK	marimitsu@us gs.gov; (907) 364-1593	Seabirds
Julian Fischer	USFWS	Anchorage, AK	julian_fischer @fws.gov; (907) 786-3644	Marine birds
Liz Labunski	USFWS	Anchorage, AK	elizabeth_labu nski@fws.gov; (907) 786-3865	Seabirds
Kate Martin	USFWS	Anchorage, AK	kate_martin@f ws.gov; (907) 786-3459	Sea ducks

<sup>\*</sup>Note: this list is not meant to represent all bird experts for the region.

#### Major Data Sources Used: Birds

Audubon Alaska. 2007. Alaska Important Bird Areas, vector digital data

Bowman, T.D., J.L. Churchill, C. Lepage, S.S. Badzinski, S.G. Gilliland, N. McLellan, and E. Silverman. 2022. Atlas of sea duck key habitat sites in North America. Sea Duck Joint Venture March 2022. https://seaduckjv.org/science-resources/sea-duck-key-habitat-sites-atlas/.

Drew, G.S., S.K. Schoen, M.D. Hood, M.L. Arimitsu, and J.F. Piatt. 2005. North Pacific Pelagic Seabird Database (NPPSD) (ver 4.1, May 2023): U.S. Geological Survey data release, https://doi.org/10.5066/F7WQ01T3.

Sea Duck Joint Venture. 2022. Atlas of Sea Duck Key Habitat Sites in North America, vector digital data.

#### Fish

Fish species depicted in this atlas include species of conservation interest, and species of commercial, recreational, or ecological importance. Fish polygons were created based on digital data, publications, and expert opinion provided by resource experts at NOAA Fisheries and others.

Commercially important species were mapped based on Essential Fish Habitat (EFH) descriptions and supplemented with information from fish surveys and reports. Forage species were mapped using spatial data generated for the Ecological Atlas of the Bering Chukchi, and Beaufort Seas (Audubon Alaska, 2017).

Expert Contacts for Arctic (Chukchi and Beaufort Seas) fish\* are:

Name	Agency	City	Phone/ Email	Species
Libby Logerwell	NOAA Fisheries	Seattle, WA	Libby.logerw ell@noaa.gov	Fish
Kimberly Rand	NOAA Fisheries	N/A	Kimberly.ran d@noaa.gov	Fish

<sup>\*</sup>Note: this list is not meant to represent all fish experts for the region.

#### Major Data Sources Used: Fish

Audubon Alaska. 2017. Ecological Atlas of the Bering Chukchi, and Beaufort Seas, 2<sup>nd</sup> Edition, vector digital data.

Logerwell, E., M. Busby, C. Carothers et. al. 2015. Fish communities across a spectrum of habitats in the western Beaufort and Chukchi Sea. Progress in Oceanography. 136: 115-132.

Marsh, J.M. and F.J. Mueter. 2023. AOOS Chukchi Sea Fish Survey Database, tabular digital data.

NOAA. 2018. Alaska Essential Fish Habitat Species Shapefiles, vector digital data.

#### Invertebrates

Invertebrates depicted in this atlas include species of conservation interest, or species of commercial, recreational, or ecological importance. Snow crab is the only commercially harvested species present in the AOI and was mapped to its EFH. Areas identified as concentration areas for crustaceans were included in the atlas, due to their importance as prey for marine mammals and birds. Invertebrate taxa present in the Boulder Patch community were also mapped to the spatial extent of the Boulder Patch provided by the University of Texas (also see Benthic Habitats section).

Expert Contacts for Arctic (Chukchi and Beaufort Seas) invertebrates\* are:

Name	Agency	City	Phone/ Email	Species/ Program
Libby Logerwell	NOAA Fisheries	Seattle, WA	Libby.logerw ell@noaa.gov	Inverts
Kimberly Rand	NOAA Fisheries	N/A	Kimberly.ran d@noaa.gov	Inverts
Ken Dunton	Univ. of Texas	Port Aransas, TX	ken.dunton@ utexas.edu	Boulder Patch community

<sup>\*</sup>Note: this list is not meant to represent all invertebrate experts for the region.

#### Major Data Sources Used: Invertebrates

Bonsell, C. and K.H. Dunton. 2021. Slow community development enhances abiotic limitation of benthic community structure in a high Arctic kelp bed. Front. Mar. Sci. 8:592295.

Moore, S.E., J.T. Clarke, S.R. Okkonen, J.M. Grebmeier, C.L. Berchok, and K.M. Stafford. 2022. Changes in gray whale phenology and distribution related to prey variability and ocean biophysics in the northern Bering and eastern Chukchi seas. PLoS One 17(4): e0265934.

NOAA. 2018. Alaska Essential Fish Habitat Species Shapefiles, vector digital data.

#### **Marine Mammals**

Marine mammals mapped in the atlas include cetaceans, pinnipeds, and polar bear that are ESA-listed and/or MMPA-listed. Marine mammal occurrence information displayed in this atlas is based on information gathered via phone/email correspondence with resource experts, hardcopy, and digital sources; key data sets are listed below and included in the metadata.

Polar bear: Polar bears (FT) occur throughout the circumpolar Arctic, primarily above the Arctic Circle. Polar bear distribution shifts in association with the Arctic ice pack, contracting and moving north in the summer and expanding to the south in the winter. Polar bear distribution was mapped using the USFWS 'proposed designated no disturbance zone' which is part of the barrier island critical habitat for the Southern Beaufort Sea and the Chukchi/Bering Sea polar bear populations in Alaska, which encompasses most of the project AOI.

*Pinnipeds:* Species mapped in this atlas include Arctic ringed seal (FT), bearded seal (FT), and Pacific walrus.

Pacific Walrus: Pacific walrus range across the continental shelf waters of the Bering and Chukchi seas. Distributions and habitat use patterns vary markedly in response to seasonal and annual variations in sea-ice cover. In April and May, most adult females and juveniles migrate northward to summer feeding areas in the Chukchi Sea. In June through August, walruses occupy broken sea-ice habitats along the northwestern coast of Alaska. Walruses typically migrate from the Chukchi Sea to the Bering Sea from October to December. USFWS provided walrus seasonal range maps shapefiles that represent the 'summer' (May – October) range for walruses. The summer range extends along the coast of Alaska from Unimak Island to Point Barrow. The northern extent of the summer range is the 100meter (m) depth contour. Most walruses travel <70 km from land and sea ice to forage, and most walruses forage at depths <100 m. The seasonal range shapefiles were verified with datasets containing recent walrus observations to ensure the shapefiles accurately represented the current seasonal ranges. Also mapped in this atlas is the Hanna Shoal Walrus Use Area; polygonal data were provided by USFWS. On Hanna Shoal, warm water diverts around a 10 m hill on the seafloor, allowing the sea ice to persist into September and attract walruses.

Arctic ringed seal (FT) and bearded seal (FT): NMFS provided polygonal data for the bearded seal Beringia distinct population segment and arctic ringed seal distribution. Bearded seals are closely associated with sea ice and their seasonal movements are generally related to sea ice advance and retreat. During winter and spring, bearded seals in Alaska are widely distributed in the broken, drifting pack ice ranging from the Chukchi Sea south to the ice front in the Bering Sea. As the ice retreats in mid-April through June, most adults are thought to move into the Chukchi and Beaufort seas where they spend the summer and early fall near the wide, fragmented margin of multiyear ice. Throughout their range, ringed seals have an affinity for ice-covered waters and are well adapted to both shorefast and pack ice throughout the fall, winter, and spring. Critical Habitat

designated for the Arctic ringed seal includes an area of marine habitat in the northern Bering, Chukchi, and Beaufort seas.

Whales: Species mapped in this atlas include beluga whale, bowhead whale (FE), fin whale (FE), gray whale, humpback whale, and minke whale. Biologically Important Areas (BIAs) data were provided by NOAA and Duke University for the Arctic Region and the Aleutian Islands and Bering Sea Region, both of which partially fell within the AOI for this atlas. The following text has been adapted from Brower et al. (2022) and Clarke et al. (2023). BIAs are compilations of the best available science and have no inherent regulatory authority. They have been used by NOAA, other federal agencies, and the public to support marine spatial planning and marine mammal impact assessments, and to inform the development of conservation measures for cetaceans. Supporting evidence for Arctic BIA II came from data derived from aerial-, land-, and vessel-based surveys; satellite telemetry; passive acoustic monitoring; Indigenous knowledge; photo-identification; aboriginal subsistence harvests, including catch and sighting locations and stomach contents; and prey studies. BIAs were identified for bowhead, gray, humpback, fin, beluga, and minke whales.

Bowhead whale: Bering-Chukchi-Beaufort (BCB) bowhead whales are migratory, ranging from subarctic to Arctic waters. Most of the stock migrates annually in spring (April-May) past the western side of St. Lawrence Island, through the Bering Strait and northeast through the eastern Chukchi Sea, traveling through nearshore leads that develop each year. The migration route turns east near Point Barrow, where it crosses the Beaufort Sea in continental slope and Canadian basin waters. Bowhead whales migrate west annually in fall (August-September) in the western Beaufort Sea. Bowhead whale polygons with concentration values of MIGRATORY indicate the spatial extent of the migratory route of this species that falls within the atlas AOI. Bowhead whales calve primarily between the beginning of April and the end of May (in the Bering Sea/outside of the atlas AOI) although calving may occur as late as August. Important areas for newborn calves have been described near Wainwright and Utqiagvik from Indigenous knowledge. The most extensive dataset of bowhead whale calf observations was from Aerial Surveys of Arctic Marine Mammals (ASAMM) for the periods July-August 2012-2019 and September-October 2000-2019 in the western Beaufort Sea. Bowhead whale polygons with concentration values of REPRODUCTIVE indicate the spatial extent of the whale calf observations of this species that fall within the atlas AOI. Temporally, bowhead whales are present in 'feeding' BIAs in the Arctic region from May-December. Feeding behavior in the western Beaufort Sea is ephemeral and can differ dramatically between years. Most bowhead whales observed in any given year in the western Beaufort Sea were not feeding, however, and were likely migrating.

Gray whale: Gray whales of the Eastern North Pacific (ENP) stock migrate each spring from Baja California, Mexico, along the west coast of the U.S. and Canada, across the Gulf of Alaska and into the Bering, Chukchi, and extreme western Beaufort seas. Gray whales remain in the U.S. Arctic throughout summer and early autumn before making a return migration south. The predominant behavior of gray whales in Arctic waters is feeding. The ASAMM project documented gray whale feeding in the eastern Chukchi Sea from summer through autumn (May-November) with moderate variability in feeding locations within these seasons. The main area for gray whale feeding within the AOI was in the northeastern Chukchi Sea within about 120 km of shore from Icy Cape to Point Barrow. Gray whales from the ENP stock calve mainly in the protected lagoons of Baja California from early January through mid-February. Calves migrate north with their mothers the following spring. Gray whale 'reproductive' BIAs were designated for July-October; polygons with concentration values of REPRODUCTIVE indicate the spatial extent of the whale calf observations of this species that fall within the AOI.

Beluga whale: The 'feeding' BIA designated for Beaufort Sea belugas in September extends from Canada to Russia. Satellite telemetry data within the core area indicated that foraging was the principal behavior. Movement data were augmented by aerial line transect survey data collected during ASAMM in September 2009-2019 in the western Beaufort and eastern Chukchi seas.

Humpback and Minke whales: Humpback whale BIAs in the Arctic are in the southcentral Chukchi Sea. Temporally, humpback whales feed in the Arctic from July-October. A minke whale feeding 'watch list area' BIA occurs in the Chukchi Sea portion of the atlas AOI. "Watch list areas" are areas that experts believe may be BIAs, but currently lack sufficient information to reliably delineate and score.

Expert contacts for Arctic (Chukchi and Beaufort Seas) marine mammals \* are:

Name	Agency	City	Phone/Email	Species
Todd Atwood	USGS	Anchorage, AK	907-786-7093; tatwood@usgs.g ov	Polar bears

Name	Agency	City	Phone/Email	Species
David Gustine	USFWS	Anchorage, AK	907-786-3621; david_gustine@f ws.gov	Polar bears
Ryan Wilson	USFWS	Anchorage, AK	907-786-3830; ryan_r_wilson@f ws.gov	Polar bears
Sarah DeLand	Duke Univ.	Beaufort, NC	sarah.deland@d uke.edu	BIAs
Bonnie Easley- Appleyard	NOAA	Anchorage, AK	bonnie.easley- appleyard@noaa .gov	Whales
Joel Garlich- Miller	USFWS	Anchorage, AK	907-244-2964; joel_garlichmille r@fws.gov	Pacific walrus

<sup>\*</sup>Note: this list is not meant to represent all marine mammal experts for the region.

#### Major Data Sources Used: Marine Mammals

- \*\*Brower, A., M. Ferguson, J. Clarke, E. Fujioka and S. DeLand. 2022. Biologically Important Areas II for cetaceans within U.S. and adjacent waters – Aleutian Islands and Bering Sea Region. Front. Mar. Sci. 9:1055398. doi: 10.3389/fmars.2022.1055398.
- \*\*Clarke, J.T., M.C. Ferguson, A.A. Brower, E. Fujioka and S. Deland. 2023. Biologically important areas II for cetaceans in U.S. and adjacent waters- Arctic region. Front. Mar. Sci. 10:1040123. doi: 10.3389/fmars.2023.1040123.
- \*\*Harrison J, Ferguson MC, New L, Cleary J, Curtice C, DeLand S, Fujioka E, Halpin PN, Tyson Moore RB and Van Parijs SM (2023) Biologically Important Areas II for cetaceans within U.S. and adjacent waters Updates and the application of a new scoring system. Front. Mar. Sci. 10:1081893. doi: 10.3389/fmars.2023.1081893
- NOAA National Marine Fisheries Service, Alaska Region. 2022. Beringia distinct population segment (DPS), bearded seal, critical habitat, vector digital data.
- Smith, M.A., M.S. Goldman, E.J. Knight, and J.J. Warrenchuk. 2017. Ecological Atlas of the Bering, Chukchi, and Beaufort Seas. 2nd edition. Audubon Alaska, Anchorage, AK.
- U.S. Fish and Wildlife Service. 2012. Hanna Shoal Walrus Use Area, vector digital data.
- U.S. Fish and Wildlife Service, Marine Mammals Management. 2010. FCH *Ursus maritimus*, vector digital data.
- U.S. Fish and Wildlife Service, Marine Mammals Management. 2017. Pacific walrus range map, vector digital data.

#### **Benthic Habitats**

Benthic habitats mapped in the ESI atlas include shallow corals, kelp, red algae, and sponges in the Stefansson Sound Boulder Patch kelp beds, and mesophotic and deep-sea corals and sponges.

Boulder Patch community: The Stefansson Sound Boulder Patch kelp beds were mapped using spatial extents provided by the University of Texas. This shallow (4-7 m depth) community contains boulder and cobble substrates that host a diverse epibenthic assemblage of taxa. General names of habitat-forming taxa present were mapped in the Benthic layer (corals, kelp, red algae, and sponges), and general invertebrate taxa present were mapped to the Boulder Patch polygons in the Invertebrates layer.

Mesophotic and deep-sea corals and sponges: Deep-sea corals and sponges were mapped using a presence point dataset. NOAA DSCRTP provided the National Database for Deep-Sea Corals and Sponges, a point database that showed known presence of these taxa throughout the Arctic AOI. All records were mapped in the ESI, regardless of age, because these are long-lived organisms that may still be present decades after data collection. Names of coral and sponge taxa in the database were generalized to response-relevant categories (e.g., soft coral, deep sea sponge, sea pens) that were used as the ESI common names. Also, the structural group of each taxon was included in the ESI concentration field as either 'Structure-forming' or 'Solitary'. This designation was made using a crosswalk between taxon name and structural group provided by DSCRTP.

Expert contacts for Arctic (Chukchi and Beaufort Seas) benthic habitats\* are:

Name	Agency	City	Phone/ Email	Species/ Program
Ken Dunton	Univ. of Texas	Port Aransas, TX	ken.dunton @utexas.edu	Boulder Patch community

<sup>\*\*</sup> Please refer to these publications for author contact information for additional regional marine mammal experts

Name	Agency	City	Phone/ Email	Species/ Program
Robert McGuinn	NOAA DSCRTP	Charleston, SC	843-631-7202	Deep-sea corals and sponges
Tom Hourigan	NOAA DSCRTP	Silver Spring, MD	tom.houriga n@noaa.gov	Deep-sea corals and sponges

<sup>\*</sup>Note: this list is not meant to represent all benthic habitat experts for the region.

#### Major Data Sources Used: Benthic Habitats

NOAA DSCRTP. 2023. National database for deep-sea corals and sponges (version 20221213-0), tabular digital data.

Bonsell, C. and K.H. Dunton. 2021. Slow community development enhances abiotic limitation of benthic community structure in a high Arctic kelp bed. Front. Mar. Sci. 8:592295.

#### **GEOGRAPHIC INFORMATION SYSTEM**

The entire atlas product is stored in digital form in a Geographic Information System (GIS) as spatial data layers and associated databases. The format for the data varies depending on the type of information or features for which the data are being stored.

Under separate cover is a metadata document that details the data dictionary, processing techniques, data lineage, and other descriptive information for the digital datasets and maps that were used to create this atlas. Below is a brief synopsis of the information contained in the digital version. Refer to the metadata embedded in each feature class in the BSEE Arctic Alaska (Chukchi and Beaufort Seas) ESI geodatabase for a full explanation of the data and its structure.

Biological resources are stored as points and polygons. Associated with each feature is a unique identification number that is linked to a series of data tables that further identify the resources. The main biological resource table consists of a list of species identification numbers for each site, the concentration of each species at each site, a mapping qualifier, and identification codes for seasonality and source information. This data table is linked to other tables that describe the seasonality and life-history time periods for each species (at month resolution) for the specified map feature. Other data tables linked to the first table include: the species identification table, which includes common and scientific names; the species status table, which gives information for federal threatened or endangered listings; and the source database, which provides source metadata at the feature-species level (specific sources are listed for each species occurring at each mapped feature in the biology feature classes).

#### **ACKNOWLEDGMENTS**

This project was funded by the Bureau of Safety and Environmental Enforcement (BSEE), U.S. Department of the Interior. We want to acknowledge the great support by Bryan Rogers and Steven Pearson (BSEE), Gabrielle McGrath (RPS), and all who assisted greatly in all aspects of the project's completion.

The biological data included on the maps were provided by numerous individuals and agencies. The individuals and agencies are listed in detail throughout the introductory pages of the ESI atlas. Staff at these organizations contributed a vast amount of information to this effort, including first-hand expertise, publications, maps, and digital data.

At Research Planning, Inc. in Columbia, South Carolina, numerous scientific, GIS, and graphic staff were involved with different phases of the project. Mark White, GIS Director, and Christine Boring, Biology Dept. Manager, were co-Project Managers. The biological data were collected and compiled onto base maps by Lauren Szathmary, Christine Boring, and Jennifer Weaver. Lee Diveley, Katy Beckham, Mark White, and Jeff Dahlin processed and produced the GIS data and metadata. Mark White, Katy Beckham, Jacqueline Michel, Christine Boring, Lauren Szathmary, and Jen Weaver prepared the species profiles. Wendy Early produced the final documents.

#### APPROPRIATE USE OF ATLAS AND DATA

This atlas and the associated database were developed to provide summary information on sensitive natural resources for the purposes of oil and chemical spill planning and response. Although the atlas and database should be very useful for other environmental and natural resource planning purposes, it should <u>not</u> be used in place of data held by any contributing agencies. Likewise, information contained in the atlas and database cannot be used in place of consultations with natural resource agencies, or in place of field surveys. Also, this atlas should not be used for navigation.

#### SPECIES LIST

 Common Name
 Scientific Name
 Common Name
 Scientific Name

 BENTHIC
 INVERTEBRATES

ALGAE
Red algae
CORAL
Corals
Sea pens
Pennatulacea
Soft coral
KELP

KELP
Kelp
REEF
Deep sea sponge
Sponges

**BIRDS** 

ALCID
Ancient murrelet Synthliboramphus antiquus

Black guillemot Cepphus grylle
Common murre Uria aalge
Crested auklet Aethia cristatella
Horned puffin Fratercula corniculata
Kittlitz's murrelet Brachyramphus brevirostris

Least aukletAethia pusillaParakeet aukletAethia psittaculaThick-billed murreUria lomviaTufted puffinFratercula cirrhata

DIVING

Loons Gavia spp.
Pacific loon Gavia pacifica
Red-throated loon Gavia stellata

GULL\_TERN

Arctic tern Sterna paradisaea
Glaucous gull Larus hyperboreus
Glaucous-winged gull Larus glaucescens
Ivory gull Pagophila eburnea
Ross's gull Rhodostethia rosea
Sabine's gull Xema sabini

PELAGIC

Black-legged kittiwake

Long-tailed jaeger

Northern fulmar

Parasitic jaeger

Pomarine jaeger

Rissa tridactyla

Stercorarius longicaudus

Fulmarus glacialis

Stercorarius parasiticus

Stercorarius pomarinus

Shearwaters

Short-tailed shearwater Puffinus tenuirostris

SHOREBIRD

Red phalarope Phalaropus fulicarius
Red-necked phalarope Phalaropus lobatus

WATERFOWL

Black scoter Melanitta americana Somateria mollissima Common eider Aythya marila Greater scaup King eider Somateria spectabilis Long-tailed duck Clangula hyemalis Northern pintail Anas acuta Red-breasted merganser Mergus serrator Spectacled eider Somateria fischeri Steller's eider Polysticta stelleri Surf scoter Melanitta perspicillata White-winged scoter Melanitta fusca

**FISH** 

Arctic cod Boreogadus saida
Bering flounder Hippoglossoides robustus
Capelin Mallotus villosus
Chum salmon Oncorhynchus keta

Greenland halibut (turbot) Reinhardtius hippoglossoides Pacific cod Gadus macrocephalus Pacific herring Clupea pallasii pallasii Ammodytes hexapterus Pacific sand lance Pink salmon Oncorhynchus gorbuscha Saffron cod Eleqinus gracilis Walleye pollock Theragra chalcogramma Yellowfin sole Limanda aspera

Arctic Alaska

INVERTEDRATES

CRAB Snow crab

now crab Chionoecetes opilio

GASTROPOD
Molluscs
INVERT
Anemones
Bryozoans
Crustaceans

Sea squirts

MARINE MAMMALS

PINNIPED

Bearded seal <u>Erignathus barbatus</u>

Pacific walrus Odobenus rosmarus divergens

Ringed seal Pusa hispida

POLAR BEAR

<u>Polar bear</u> <u>Ursus maritimus</u>

WHALE

Beluga whale

Bowhead whale

Fin whale

Gray whale

Humpback whale

Minke whale

Delphinapterus leucas

Balaena mysticetus

Balaenoptera physalus

Eschrichtius robustus

Megaptera novaeangliae

Balaenoptera acutorostrata

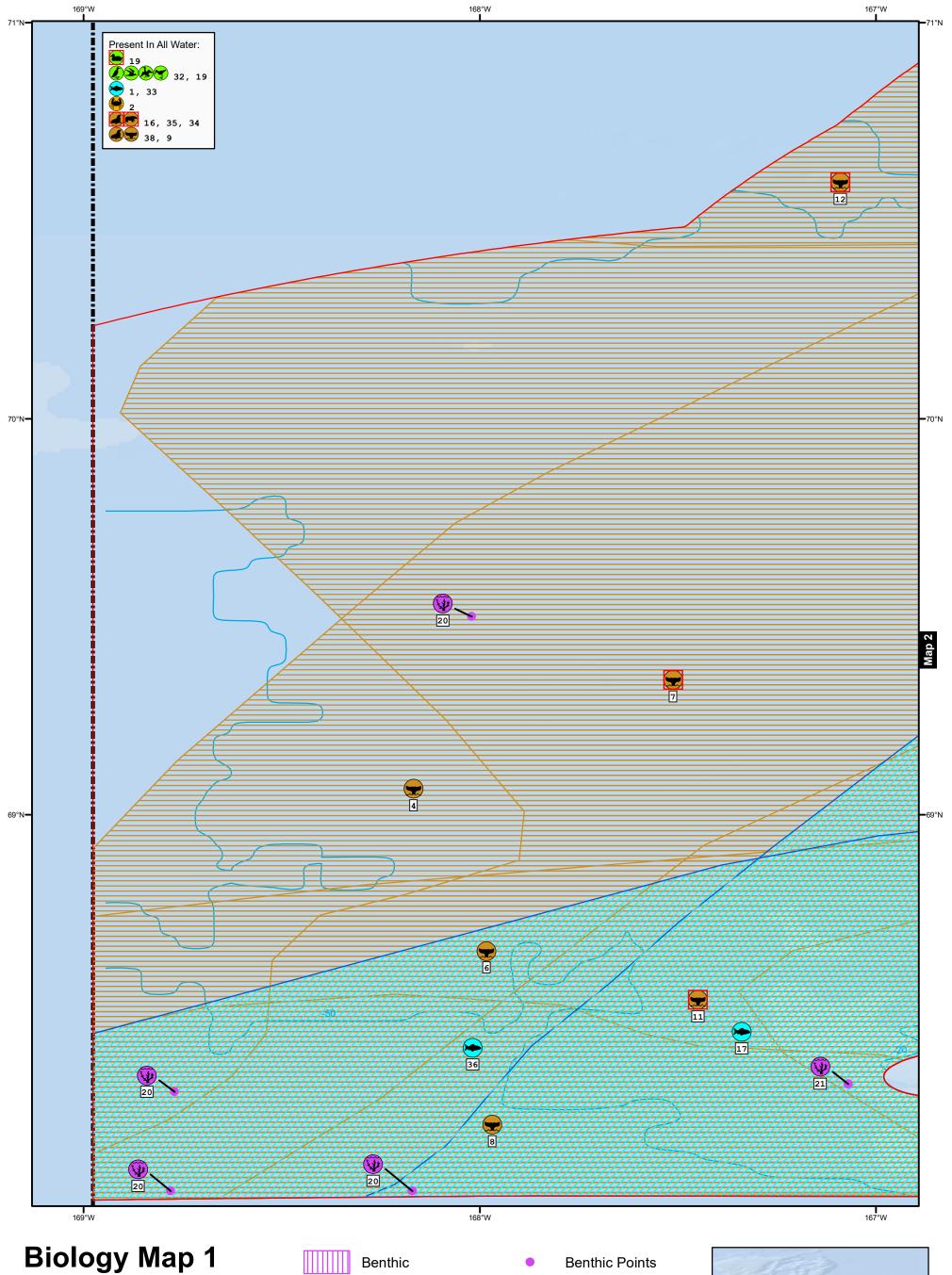
Chukchi and Beaufort Seas Offshore ESI - Page VII

<sup>\*</sup> Threatened and endangered species are designated by underlining

# BSEE ARCTIC ALASKA CHUKCHI AND BEAUFORT SEAS OFFSHORE ENVIRONMENTAL SENSITIVITY INDEX MAPS



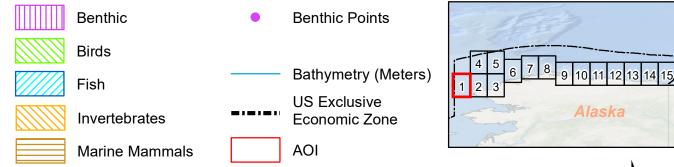






Chukchi and Beaufort Seas

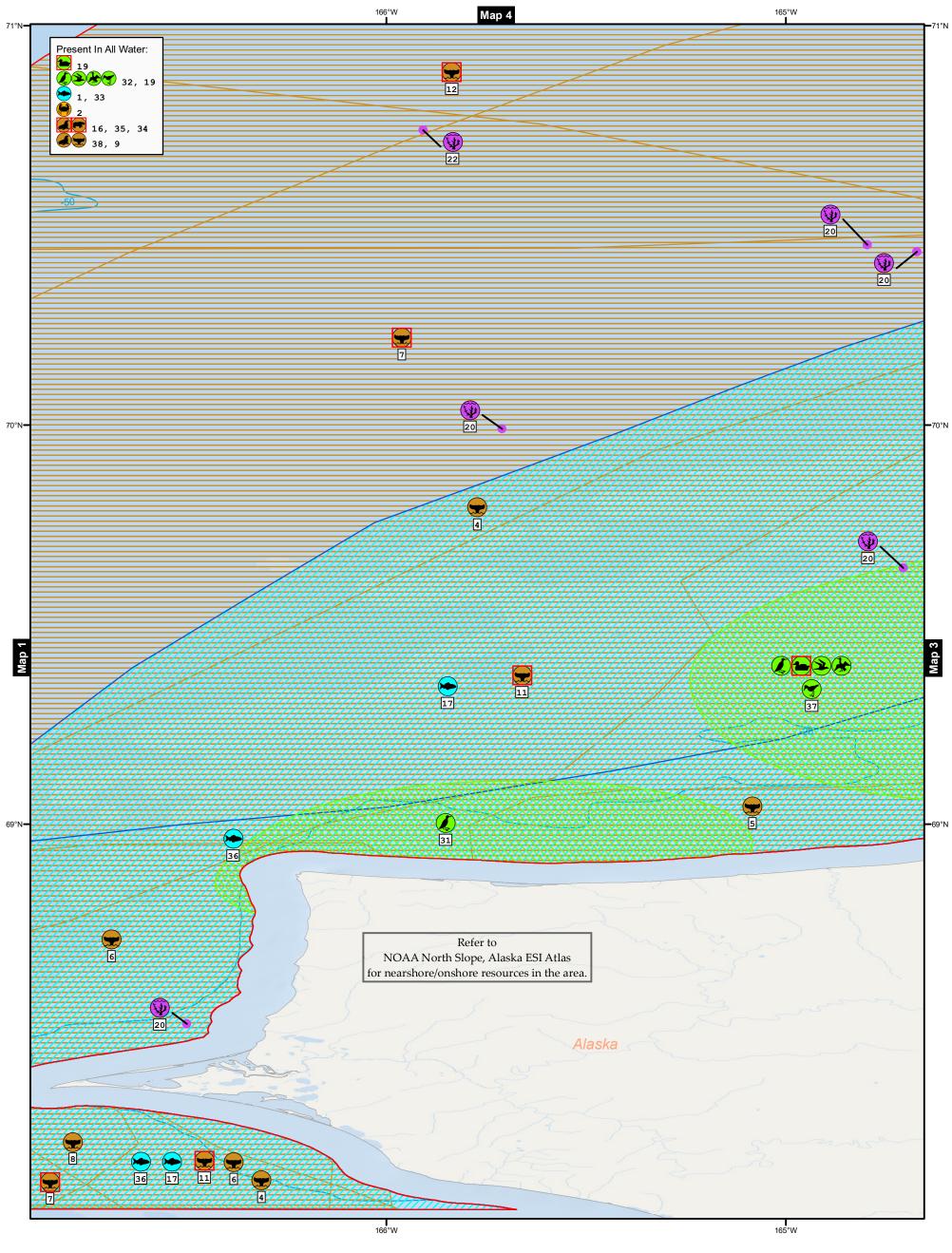




#### SEE MAP DATA TABLE

# Arctic Alaska Offshore ESI: Biology Map 1 BIOLOGICAL RESOURCES:

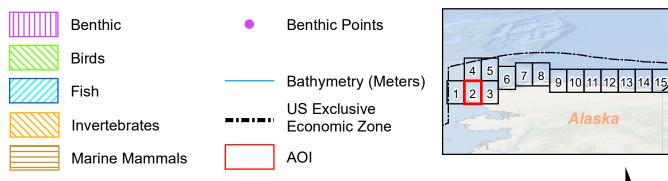
	THIC:										
RAR#	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)				,		
20	Soft coral		Solitary	Vulnerable Occurrence	J F M A M J J A S O N D						
21	Deep sea sponge		Structure-Forming	Vulnerable Occurrence	J F M A M J J A S O N D						
	Soft coral		Solitary	Vulnerable Occurrence	J F M A M J J A S O N D						
BIRD	:										
RAR#	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Nesting	Migr	ating	Molting		
19	Arctic tern		100S	General Distribution	MJJASO	-	-	-	_		
	Black-legged kittiwake		10,000S	General Distribution	MJJASON	_	_	_	_		
	Common eider		10S	General Distribution	AMJJASON	_	Apr-Jun	Oct-Nov	Jun-Jul		
	Common murre		1,000\$	General Distribution	JJASO	_	, (pr our	-	Sep-Oct		
	Glaucous-winged gull		100S	General Distribution	MJJASO	-	_	_	- -		
	Glaucous gull		1,000S	General Distribution	AMJJASON		-	-			
	King eider		100S	General Distribution	AMJJASON	-	Apr-Jul	Oct-Nov	Jun-Sep		
	Long-tailed duck		100S	General Distribution	JJAS		Api-oui	-	Jun-Sep		
	Pacific Ioon		100S	General Distribution	MJJASO	-	Jun-Sep	-	Juli-Sep		
	Parasitic jaeger		100S	General Distribution	M J J A S O	-	Juli-Sep	-	-		
	, 0		100S	General Distribution	MJJASO	-	-	-	-		
	Pomarine jaeger Red-necked phalarope		100S 100S	General Distribution	MJJASO	-	-		-		
								-	- ^ Con		
	Red phalarope		100S	General Distribution	M J J A S O N M J J A S O	-	May-Nov	-	Aug-Sep		
	Sabine's gull	Т	100S	General Distribution  General Distribution	MJJASON	-	- May lun	Oct Nov	lun Can		
	Spectacled eider	T	100S			-	May-Jun	Oct-Nov	Jun-Sep		
	Steller's eider		108	General Distribution	MJJASO	•	May-Oct	-	Jun-Oct		
	Thick-billed murre		1,000S	General Distribution	MJJASON	-	Jul-Sep	-	Aug-Nov		
	White-winged scoter		10S	General Distribution	MJJASO	-	-	-	-		
32	Ancient murrelet		100S	General Distribution	JASO	-	-	-	-		
	Black guillemot		100S	General Distribution	AMJJASON	-	-	-	-		
	Crested auklet		1,000S	General Distribution	J J A S O	-	Aug-Oct	-	Jun-Oct		
	Horned puffin		100S	General Distribution	J J A S O	-	Jun-Jun	Sep-Oct	-		
	Ivory gull		10S	General Distribution	AMJJASON	-	Apr-May	Sep-Nov	-		
	Kittlitz's murrelet		100S	General Distribution	J J A S O N	-		-			
	Least auklet		1,000S	General Distribution	MAMJJASON	-	Mar-Nov	-	Jun-Oct		
	Long-tailed jaeger		100S	General Distribution	MJJASO	-	-	-	-		
	Loons		100S	General Distribution	AMJJASON	-	-	-	-		
	Northern fulmar		1,000S	General Distribution	J J A S O N	-	-	-	-		
	Parakeet auklet		100S	General Distribution	MAMJJASON	-	Mar-May	Aug-Nov	Jun-Nov		
	Ross's gull		100S	General Distribution	J SON	-	Jun-Jun	Sep-Nov	-		
	Short-tailed shearwater		1,000S	General Distribution	AMJJASO	-	Apr-May	Sep-Oct	May-Sep		
	Tufted puffin		100S	General Distribution	F M A M S O N D	-	Feb-May	Sep-Dec	-		
FISH	•										
						_		_			
RAR#	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Spaw	ning	Eggs	Larvae	Juveniles	Adults
1	Arctic cod		-	General Distribution	J F M A M J J A S O N D	Dec-Mar	-	Aug-Sep	Aug-Sep	Jan-Dec	Jan-Dec
	Bering flounder		-	General Distribution	J F M A M J J A S O N D	-	-	Aug-Aug	Aug-Aug	Jan-Dec	Jan-Dec
	Greenland halibut (turbot)		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	Jan-Dec	Jan-Dec
	Pacific cod		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	-	-
	Pacific sand lance		-	General Distribution	J F M A M J J A S O N D	-	-	-	Aug-Sep	Jan-Dec	Jan-Dec
	Walleye pollock		-	General Distribution	J F M A M J J A S O N D	-	-	Sep-Sep	Sep-Sep	Jan-Dec	Jan-Dec
17	Capelin		-	General Distribution	J F M A M J J A S O N D	-	-	-	Sep-Sep	Jan-Dec	Jan-Dec
	Yellowfin sole		-	General Distribution	J F M A M J J A S O N D	-	-	-	Sep-Sep	Jan-Dec	Jan-Dec
			-	General Distribution	J F M A M J J A S O N D	-	-	-		Jan-Dec	Jan-Dec
33	Pacific herring			Octional Distribution						Jan-Dec	Jan-De
			-	General Distribution	J F M A M J J A S O N D	-	-	-	-		Jan-Ded
	Pacific herring		-			-	-	-	-	Jul-Dec	
	Pacific herring Chum salmon		-	General Distribution	J F M A M J J A S O N D	- - -	-	-	-	Jul-Dec Jan-Dec	Jan-Ded
36	Pacific herring Chum salmon Pink salmon Saffron cod		- -	General Distribution General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D	- - -	- - -	-			Jan-Ded
36	Pacific herring Chum salmon Pink salmon		- -	General Distribution General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D	- - -	:	-			Jan-Dec
36	Pacific herring Chum salmon Pink salmon Saffron cod	S F	- - -	General Distribution General Distribution General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	-	- - - vnina	-	-	Jan-Dec	
36  NVE  RAR#	Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species	SF	- -	General Distribution General Distribution General Distribution Mapping Qualifier	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D Monthly Presence (Jan-Dec)	- - - - Spaw	- - - vning	- Eggs			
36 <b>NVE</b> RAR#	Pacific herring Chum salmon Pink salmon Saffron cod	SF	- - -	General Distribution General Distribution General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	-	- - - vning -	-	-	Jan-Dec	
36 <b>NVE</b> RAR# 2	Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab	SF	- - -	General Distribution General Distribution General Distribution Mapping Qualifier	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D Monthly Presence (Jan-Dec)	-	- - - vning -	- Eggs	-	Jan-Dec	
NVE RAR# 2	Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab		- - - Concentration -	General Distribution General Distribution General Distribution  Mapping Qualifier General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D D J F M A M J J A S O N D  Monthly Presence (Jan-Dec)  J F M A M J J A S O N D	- Spaw -	-	Eggs -	- Larvae -	Jan-Dec	
NVE RAR# 2	Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab	S F	Concentration - Concentration	General Distribution General Distribution General Distribution  Mapping Qualifier General Distribution  Mapping Qualifier	J F M A M J J A S O N D J F M A M J J A S O N D D J F M A M J J A S O N D Monthly Presence (Jan-Dec)  Monthly Presence (Jan-Dec)  Monthly Presence (Jan-Dec)	-	- - vning - Calving	- Eggs	-	Jan-Dec	
NVE RAR# 2 WARI RAR#	Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab		- - - Concentration -	General Distribution General Distribution General Distribution  Mapping Qualifier General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D Monthly Presence (Jan-Dec)  Monthly Presence (Jan-Dec)  Monthly Presence (Jan-Dec)	- Spaw -	-	Eggs -	- Larvae -	Jan-Dec	
NVE RAR# 2 MARI RAR# 4	Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab  INE MAMMAL: Species		Concentration - Concentration	General Distribution General Distribution General Distribution  Mapping Qualifier General Distribution  Mapping Qualifier	J F M A M J J A S O N D J F M A M J J A S O N D D J F M A M J J A S O N D Monthly Presence (Jan-Dec)  Monthly Presence (Jan-Dec)  Monthly Presence (Jan-Dec)	Spaw - Mating	-	Eggs -	- Larvae -	Jan-Dec	
NVE RAR# 2 MAR RAR# 4 6	Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab INE MAMMAL: Species Beluga whale		Concentration Concentration Migratory Route	General Distribution General Distribution General Distribution  Mapping Qualifier General Distribution  Mapping Qualifier  Migration	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D Monthly Presence (Jan-Dec)  Monthly Presence (Jan-Dec)  Monthly Presence (Jan-Dec)	Spaw - Mating	-	Eggs -	- Larvae -	Jan-Dec	
36  NVE RAR# 2  MARI RAR# 4 6 7	Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab INE MAMMAL: Species Beluga whale Gray whale	S F	Concentration Concentration Guidant State of the Concentration Migratory Route Reproductive/Feeding	General Distribution General Distribution General Distribution  Mapping Qualifier General Distribution  Mapping Qualifier  Migration Concentration Area	Monthly Presence (Jan-Dec)	Spaw - Mating	-	Eggs -	- Larvae -	Jan-Dec	
36  NVE  RAR#  2  MAR  RAR#  4  6  7  8	Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab INE MAMMAL: Species Beluga whale Gray whale Fin whale	S F	Concentration  Concentration  Concentration  Migratory Route Reproductive/Feeding Feeding	General Distribution General Distribution General Distribution  Mapping Qualifier General Distribution  Mapping Qualifier Migration Concentration Area Vulnerable Occurrence	Monthly Presence (Jan-Dec)	Spaw - Mating	-	Eggs -	- Larvae -	Jan-Dec	
36  NVE  RAR#  2  MAR  RAR#  4  6  7  8  9	Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab INE MAMMAL: Species Beluga whale Gray whale Fin whale Humpback whale	S F	Concentration  Concentration  Concentration  Migratory Route Reproductive/Feeding Feeding Feeding Feeding	General Distribution General Distribution General Distribution  Mapping Qualifier General Distribution  Mapping Qualifier Migration Concentration Area Vulnerable Occurrence Vulnerable Occurrence	Monthly Presence (Jan-Dec)  A M N  J J A S O  J A S O  J A S O	Spaw - Mating	Calving	Eggs -	- Larvae -	Jan-Dec	
36  NVE RAR# 2  MARI RAR# 4 6 7 8 9 11	Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab  INE MAMMAL: Species Beluga whale Gray whale Fin whale Humpback whale Minke whale	S F	Concentration  Concentration  Concentration  Migratory Route Reproductive/Feeding Feeding Feeding Feeding Feeding	General Distribution General Distribution General Distribution  Mapping Qualifier General Distribution  Mapping Qualifier Migration Concentration Area Vulnerable Occurrence Vulnerable Occurrence	Monthly Presence (Jan-Dec)  A M N N  J J A S O  J A S O  J A S O  J A S O	Spaw - Mating	Calving	Eggs -	- Larvae -	Jan-Dec	
36  NVE  RAR#  2  MAR  4  6  7  8  9  11  12	Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab  INE MAMMAL: Species Beluga whale Gray whale Fin whale Humpback whale Minke whale Bowhead whale	S F E	Concentration  Concentration  Concentration  Migratory Route Reproductive/Feeding Feeding Feeding Feeding Migratory Route	General Distribution General Distribution General Distribution  Mapping Qualifier General Distribution  Mapping Qualifier Migration Concentration Area Vulnerable Occurrence Vulnerable Occurrence Vulnerable Occurrence Migration	Monthly Presence (Jan-Dec)  Monthly Presence (Jan-Dec)  Monthly Presence (Jan-Dec)  A M N N N N N N N N N N N N N N N N N N	- Spaw Mating	Calving	Eggs - Pupping	Larvae  -  Molting  -  -  -  -  -  -  -  -  -  -  -  -  -	Jan-Dec	
36  NVE  RAR#  2  MAR  4  6  7  8  9  11  12  16	Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab  INE MAMMAL: Species Beluga whale Gray whale Fin whale Humpback whale Minke whale Bowhead whale Bowhead whale	S F E E	Concentration  Concentration  Concentration  Migratory Route Reproductive/Feeding Feeding Feeding Feeding Migratory Route	General Distribution General Distribution General Distribution  Mapping Qualifier General Distribution  Mapping Qualifier Migration Concentration Area Vulnerable Occurrence Vulnerable Occurrence Vulnerable Occurrence Migration Migration Migration	Monthly Presence (Jan-Dec)  Monthly Presence (Jan-Dec)  Monthly Presence (Jan-Dec)  A M N N N N N N N N N N N N N N N N N N	- Spaw - - Mating - - - - -	Calving	Eggs -	- Larvae -	Jan-Dec	Adults -
36  NVE  RAR# 2  MARI 4 6 7 8 9 11 12 16 34	Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab  INE MAMMAL: Species Beluga whale Gray whale Fin whale Humpback whale Minke whale Bowhead whale Bowhead whale Bearded seal	S F E E T	Concentration  Concentration  Concentration  Migratory Route Reproductive/Feeding Feeding Feeding Feeding Migratory Route Migratory Route  Migratory Route  -	General Distribution General Distribution General Distribution  Mapping Qualifier General Distribution  Mapping Qualifier Migration Concentration Area Vulnerable Occurrence Vulnerable Occurrence Vulnerable Occurrence Migration Migration General Distribution	Monthly Presence (Jan-Dec)  Monthly Presence (Jan-Dec)  A M N N N N N N N N N N N N N N N N N N	Spaw - Mating Apr-May	Calving	Eggs - Pupping Mar-May	Larvae  -  Molting  -  -  -  Apr-Jul	Jan-Dec	



#### Biology Map 2 Arctic Alaska Offshore ESI

Chukchi and Beaufort Seas

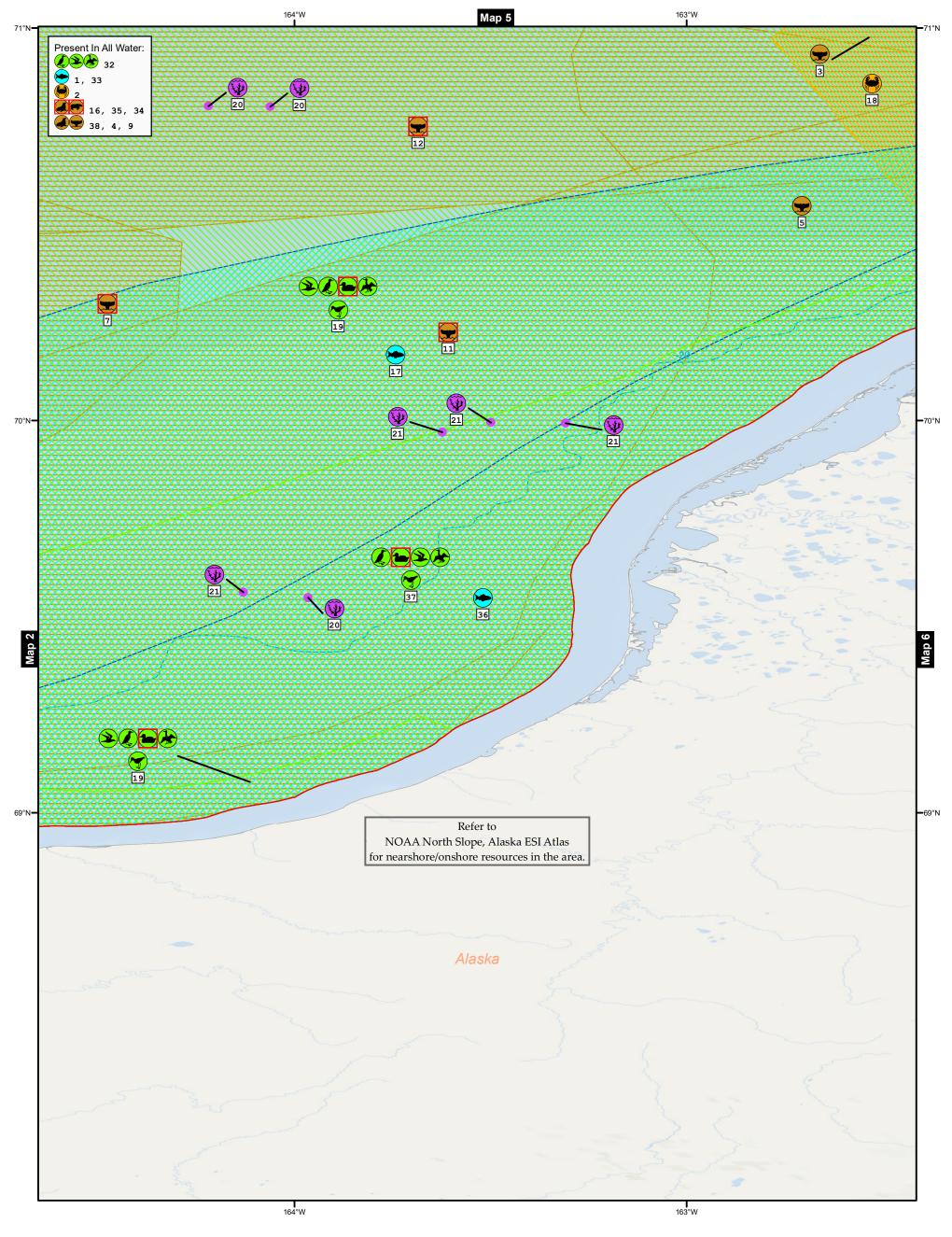




#### SEE MAP DATA TABLE

# Arctic Alaska Offshore ESI: Biology Map 2 BIOLOGICAL RESOURCES:

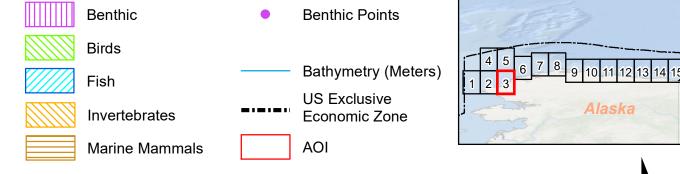
RAR#	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)						
20	Soft coral		Solitary	Vulnerable Occurrence	J F M A M J J A S O N D						
22	Deep sea sponge		Structure-Forming	Vulnerable Occurrence	J F M A M J J A S O N D						
IRD											
	Species	S F	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Nesting	Migr	ating	Molting		
	Arctic tern	3 1	100S	General Distribution	M J J A S O	ivesurig	iviigi	auriy	ivioliting		
19	Black-legged kittiwake		10,000S	General Distribution	MJJASON	-	-	-	-		
	Common eider		108	General Distribution	A M J J A S O N	-	Apr-Jun	Oct-Nov	Jun-Jul		
	Common murre		1,000S	General Distribution	JJASO	-	· -	-	Sep-Oct		
	Glaucous-winged gull		100S	General Distribution	MJJASO	-	-	-	-		
	Glaucous gull		1,000S	General Distribution	AMJJASON	-	-	-	-		
	King eider Long-tailed duck		100S 100S	General Distribution General Distribution	A M J J A S O N	-	Apr-Jul	Oct-Nov	Jun-Sep Jun-Sep		
	Pacific Ioon		100S	General Distribution	MJJASO	-	- Jun-Sep	-	Juli-Sep -		
	Parasitic jaeger		100S	General Distribution	MJJASO	-	- -	-	-		
	Pomarine jaeger		100S	General Distribution	MJJASO	-	-	-	-		
	Red-necked phalarope		100S	General Distribution	MJJASO	-	-	-	-		
	Red phalarope		100S	General Distribution	MJJASON	-	May-Nov	-	Aug-Sep		
	Sabine's gull	-	100S	General Distribution  General Distribution	MJJASO	-	- May lun	- Oat Nav	- Lun Con		
	Spectacled eider Steller's eider	T T	100S 10S	General Distribution  General Distribution	M J J A S O N M J J A S O	-	May-Jun May-Oct	Oct-Nov	Jun-Sep Jun-Oct		
	Thick-billed murre	•	1,000S	General Distribution	MJJASON	-	Jul-Sep	-	Aug-Nov		
	White-winged scoter		10S	General Distribution	MJJASO	-	-	-	-		
	Black-legged kittiwake		Up To 37,540 Birds	Concentration Area	MJJASON	May-Aug	-	-	-		
32	Ancient murrelet		100S	General Distribution	JASO	-	-	-	-		
	Black guillemot		100S	General Distribution	AMJJASON	-	- ^	-	- lun Oot		
	Crested auklet Horned puffin		1,000S 100S	General Distribution General Distribution	J J A S O	-	Aug-Oct Jun-Jun	- Sep-Oct	Jun-Oct		
	Ivory gull		100S 10S	General Distribution	AMJJASON	-	Apr-May	Sep-Oct Sep-Nov	-		
	Kittlitz's murrelet		100S	General Distribution	JJASON	-	-	-	-		
	Least auklet		1,000S	General Distribution	MAMJJASON	-	Mar-Nov	-	Jun-Oct		
	Long-tailed jaeger		100S	General Distribution	MJJASO	-	-	-	-		
	Loons		100S	General Distribution	AMJJASON	-	-	-	-		
	Northern fulmar Parakeet auklet		1,000S 100S	General Distribution General Distribution	M A M J J A S O N	-	- Mar-May	- Aug-Nov	- Jun-Nov		
	Ross's gull		100S	General Distribution	J SON	-	Jun-Jun	Sep-Nov	Juli-Nov -		
	Short-tailed shearwater		1,000S	General Distribution	AMJJASO	-	Apr-May	Sep-Oct	May-Sep		
	Tufted puffin		100S	General Distribution	FMAM SOND	-	Feb-May	Sep-Dec	-		
37	Black-legged kittiwake		Up To 10,000 Birds	Concentration Area	MJJASON	May-Aug	-	-	-		
	Common eider		Up To 1,000 Birds	Rafting	AMJJASON	-	Apr-Jun	Oct-Nov	Jun-Jul		
	Common murre Glaucous gull		Up To 100,000 Birds	Concentration Area Concentration Area	JJASO	Jun-Sep	-	-	Sep-Oct		
	Greater scaup		Up To 86,836 Birds Up To 100 Birds	Concentration Area	A M J J A S O N M J J A S O	-	- May-Oct	-	-		
	King eider		10,000S	Rafting	AMJJASON	-	Apr-Jul	Oct-Nov	Jun-Sep		
	Long-tailed duck		10,000S	Rafting	AMJJASON	-	Apr-May	Oct-Nov	Jun-Aug		
	Northern pintail		100S	Concentration Area	MJJASO	-	-	-	-		
	Pacific loon		1,000S	Concentration Area	MJJASO	-	Jun-Sep	-	-		
	Parasitic jaeger		100S	Concentration Area	MJJASO	-	-	-	-		
	Pomarine jaeger Red-breasted merganser		Up To 2,816 Birds High	Concentration Area Rafting	M J J A S O	Jun-Jul -	-	-	-		
	Red-necked phalarope		1,000S	Concentration Area	M J J A S O	-	-	-	-		
	Red-throated loon		100S	Concentration Area	A M J J A S O	-	Apr-Oct	-	-		
	Red phalarope		1,000S	Concentration Area	MJJASON	-	May-Nov	-	Aug-Sep		
	Shearwaters	_	100S	Concentration Area	JJASON	-	Aug-Sep	-	-		
	Spectacled eider	T	Up To 33,000 Birds	Rafting	MJJASON	- Lun A	May-Jun	Oct-Nov	Jun-Sep		
	Steller's eider Surf scoter	Т	High Up To 100 Birds	Rafting Concentration Area	J J A S O M J J A S O N	Jun-Aug -	Jun-Oct -	-	Jun-Oct Jul-Aug		
	Thick-billed murre		Up To 100,000 Birds	Concentration Area	MJJASON	May-Jul	May-May	Jul-Sep	Aug-Nov		
	White-winged scoter		High	Rafting	MJJASO	-	-	-	-		
1011											
ISH:			_					_			
RAR#	Species	S F	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Spaw	ning	Eggs	Larvae	Juveniles	Adult
1	Arctic cod		-	General Distribution	J F M A M J J A S O N D	Dec-Mar	-	Aug-Sep	Aug-Sep	Jan-Dec	Jan-De
	Bering flounder		-	General Distribution	J F M A M J J A S O N D	-	-	Aug-Aug	Aug-Aug	Jan-Dec	Jan-De
	Greenland halibut (turbot) Pacific cod		- -	General Distribution General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D	-	-	-	-	Jan-Dec -	Jan-De
	Pacific cod Pacific sand lance		-	General Distribution	J F M A M J J A S O N D	-	-	-	- Aug-Sep	- Jan-Dec	- Jan-De
	Walleye pollock		-	General Distribution	J F M A M J J A S O N D	-	-	Sep-Sep	Sep-Sep	Jan-Dec	Jan-De
17	Capelin		-	General Distribution	J F M A M J J A S O N D	-	-	-	Sep-Sep	Jan-Dec	Jan-De
	Yellowfin sole		-	General Distribution	J F M A M J J A S O N D	-	-	-	Sep-Sep	Jan-Dec	Jan-De
	Pacific herring		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	Jan-Dec	Jan-De
36	Chum salmon Pink salmon		-	General Distribution General Distribution	J F M A M J J A S O N D	-	-	-	-	Jan-Dec	Jan-De Jan-De
	Pink salmon Saffron cod		-	General Distribution General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D	-	-	-	-	Jul-Dec Jan-Dec	Jan-De Jan-De
				Dioxination						230	50
NVE	RTEBRATE:										
RAR#	Species	S F	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Spaw	ning	Eggs	Larvae	Juveniles	Adults
2	Snow crab		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	-	-
ΛΔΡΙ	NE MAMMAL:										
		o -	0	M- ' 0 ""	Manufall D. Co. T.	B.4. ()	0.1.	ъ :	A 4 101		
	Species	S F	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Mating	Calving	Pupping	Molting		
	Beluga whale		Migratory Route	Migration	A M N	-	-	-	-		
	Gray whale		Reproductive/Feeding	Concentration Area	JASO	-	-	-	-		
	Gray whale Fin whale	Е	Reproductive/Feeding Feeding	Concentration Area  Vulnerable Occurrence	J A S O	-	-	-	-		
- 1	Humpback whale	E	Feeding	Vulnerable Occurrence	JAS	-	-	-	-		
R	Minke whale		Feeding	Vulnerable Occurrence	JASO	-	-	-	-		
		_		Migration	AM	_	-	-	-		
9	Bowhead whale	E	Migratory Route	Migration							
9 11	Bowhead whale Bowhead whale	E	Migratory Route  Migratory Route	Migration	ASO	-	-	-	-		
9 11 12 16	Bowhead whale Bearded seal	E T		Migration General Distribution	J F M A M J J A S O N D	- Apr-May	-	- Mar-May	- Apr-Jul		
9 11 12 16 34	Bowhead whale	Е		Migration	ASO		- - -		- Apr-Jul - May-Jul		



#### Biology Map 3 Arctic Alaska Offshore ESI

Chukchi and Beaufort Seas

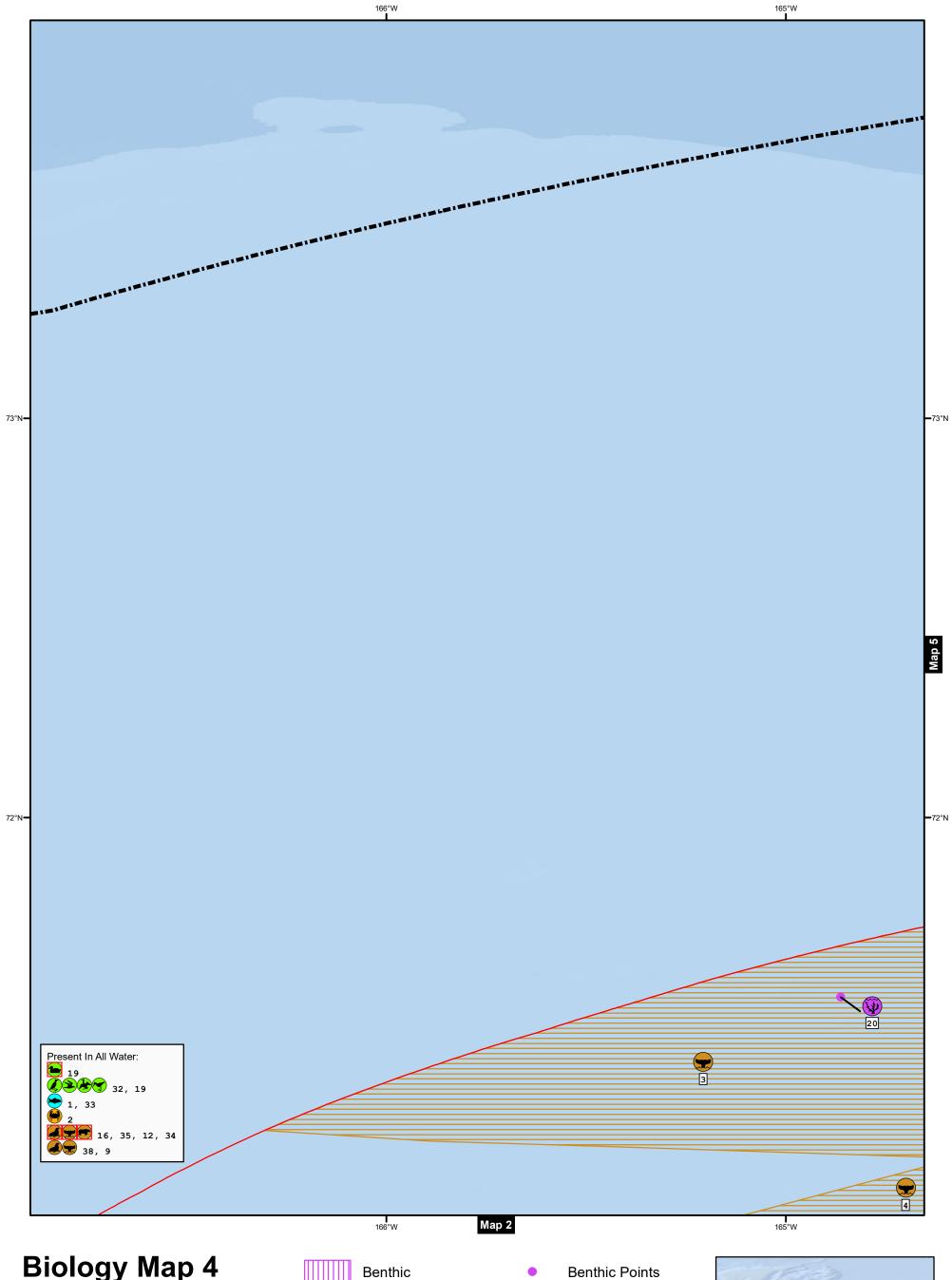




#### SEE MAP DATA TABLE

# Arctic Alaska Offshore ESI: Biology Map 3 BIOLOGICAL RESOURCES:

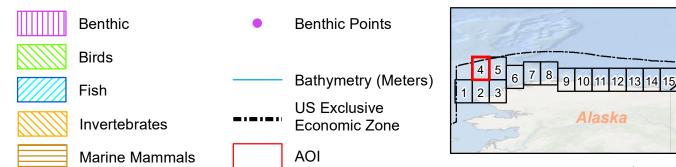
RAR#	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)						
20	Soft coral		Solitary	Vulnerable Occurrence	J F M A M J J A S O N D						
21	Deep sea sponge		Structure-Forming	Vulnerable Occurrence	J F M A M J J A S O N D						
	Soft coral		Solitary	Vulnerable Occurrence	J F M A M J J A S O N D						
IRD:											
		0.5	0 1 5		M 411 B (1 B )	<b>N</b> 1 (*			B.A. 111		
	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Nesting	Migr	ating	Molting		
19	Arctic tern		1008	General Distribution	MJJASO	-	-	-	-		
	Black-legged kittiwake		10,000S	General Distribution	MJJASON	-	- ^ !	- O-4 N	-		
	Common eider Common murre		10S 1,000S	General Distribution General Distribution	A M J J A S O N J J A S O	-	Apr-Jun	Oct-Nov	Jun-Jul Sep-Oct		
	Glaucous-winged gull		1,000S 100S	General Distribution	MJJASO	-	-		Sep-Oct		
	Glaucous gull		1,000S	General Distribution	AMJJASON	-	-	-	_		
	King eider		1008	General Distribution	A M J J A S O N	-	Apr-Jul	Oct-Nov	Jun-Sep		
	Long-tailed duck		100S	General Distribution	JJAS	-		-	Jun-Sep		
	Pacific Ioon		100S	General Distribution	MJJASO	-	Jun-Sep	-	- '		
	Parasitic jaeger		100S	General Distribution	MJJASO	-	-	-	-		
	Pomarine jaeger		100S	General Distribution	MJJASO	-	-	-	-		
	Red-necked phalarope		100S	General Distribution	MJJASO	-	-	-	-		
	Red phalarope		100S	General Distribution	MJJASON	-	May-Nov	-	Aug-Sep		
	Sabine's gull	-	1008	General Distribution	MJJASO	-	-	-	-		
	Spectacled eider	T	100S	General Distribution	MJJASON	-	May-Jun	Oct-Nov	Jun-Sep		
	Steller's eider	l l	108	General Distribution	MJJASO	-	May-Oct	-	Jun-Oct		
	Thick-billed murre White-winged scoter		1,000S 10S	General Distribution General Distribution	M J J A S O N M J J A S O	-	Jul-Sep -	-	Aug-Nov -		
32	Ancient murrelet		100S	General Distribution	JASO	-	-	-	-		
JE	Black guillemot		1005	General Distribution	AMJJASON	-	-	-	-		
	Crested auklet		1,000S	General Distribution	JJASO	-	Aug-Oct	-	Jun-Oct		
	Horned puffin		1008	General Distribution	JJASO	-	Jun-Jun	Sep-Oct	-		
	lvory gull		108	General Distribution	AMJJASON	-	Apr-May	Sep-Nov	-		
	Kittlitz's murrelet		100S	General Distribution	J J A S O N	-	-	-	-		
	Least auklet		1,000S	General Distribution	MAMJJASON	-	Mar-Nov	-	Jun-Oct		
	Long-tailed jaeger		100S	General Distribution	MJJASO	-	-	-	-		
	Loons		100S	General Distribution	AMJJASON	-	-	-	-		
	Northern fulmar		1,000S	General Distribution	JJASON	-	-	-	-		
	Parakeet auklet		1008	General Distribution	MAMJJASON	-	Mar-May	Aug-Nov	Jun-Nov		
	Ross's gull		100S	General Distribution	J SON	-	Jun-Jun	Sep-Nov	May San		
	Short-tailed shearwater Tufted puffin		1,000S 100S	General Distribution General Distribution	F M A M S O N D	-	Apr-May Feb-May	Sep-Oct Sep-Dec	May-Sep		
37	Black-legged kittiwake		Up To 10,000 Birds	Concentration Area	MJJASON	- May-Aug	reb-iviay	Sep-Dec	_		
01	Common eider		Up To 1,000 Birds	Rafting	AMJJASON	-	Apr-Jun	Oct-Nov	Jun-Jul		
	Common murre		Up To 100,000 Birds	Concentration Area	JJASO	Jun-Sep		-	Sep-Oct		
	Glaucous gull		Up To 86,836 Birds	Concentration Area	AMJJASON	-	-	-	-		
	Greater scaup		Up To 100 Birds	Concentration Area	MJJASO	-	May-Oct	-	-		
	King eider		10,000S	Rafting	AMJJASON	-	Apr-Jul	Oct-Nov	Jun-Sep		
	Long-tailed duck		10,000S	Rafting	AMJJASON	-	Apr-May	Oct-Nov	Jun-Aug		
	Northern pintail		100S	Concentration Area	MJJASO	-	-	-	-		
	Pacific loon		1,000S	Concentration Area	MJJASO	-	Jun-Sep	-	-		
	Parasitic jaeger		100S	Concentration Area	MJJASO	-	-	-	-		
	Pomarine jaeger		Up To 2,816 Birds	Concentration Area	MJJASO	Jun-Jul	-	-	-		
	Red-breasted merganser Red-necked phalarope		High 1,000S	Rafting Concentration Area	M J J A S O	-	-	-	-		
	Red-throated loon		1008	Concentration Area	AMJJASO	-	- Apr-Oct	-	-		
	Red phalarope		1,000\$	Concentration Area	MJJASON	-	May-Nov	-	Aug-Sep		
	Shearwaters		1008	Concentration Area	JJASON	_	Aug-Sep	-	-		
	Spectacled eider	Т	Up To 33,000 Birds	Rafting	MJJASON	-	May-Jun	Oct-Nov	Jun-Sep		
	Steller's eider	Т	High	Rafting	JJASO	Jun-Aug	Jun-Oct	-	Jun-Oct		
	Surf scoter		Up To 100 Birds	Concentration Area	MJJASON	-	-	-	Jul-Aug		
	Thick-billed murre		Up To 100,000 Birds	Concentration Area	MJJASON	May-Jul	May-May	Jul-Sep	Aug-Nov		
	White-winged scoter		High	Rafting	MJJASO	-	-	-	-		
SH:											
		C F	Concentration	Manning Ouglifier	Monthly Processes (Inc. Dec.)	0	vnina	E	Longe	luvonii	Λ -1-
	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Spav	villing	Eggs	Larvae	Juveniles	Adı
1	Arctic cod		-	General Distribution	J F M A M J J A S O N D	Dec-Mar	-	Aug-Sep	Aug-Sep	Jan-Dec	Jan-
	Bering flounder  Greenland halibut (turbot)		-	General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D	-	-	Aug-Aug -	Aug-Aug -	Jan-Dec Jan-Dec	Jan-
	Greenland halibut (turbot) Pacific cod		-	General Distribution General Distribution	J F M A M J J A S O N D	-	-	-	-	Jan-Dec -	Jan-
	Pacific sand lance		-	General Distribution	J F M A M J J A S O N D	-	-	-	- Aug-Sep	Jan-Dec	Jan-
	Walleye pollock		-	General Distribution	J F M A M J J A S O N D	-	-	Sep-Sep	Sep-Sep	Jan-Dec	Jan-
17	Capelin		-	General Distribution	J F M A M J J A S O N D	-	-	-	Sep-Sep	Jan-Dec	Jan-
	Yellowfin sole		-	General Distribution	J F M A M J J A S O N D	-	-	-	Sep-Sep	Jan-Dec	Jan-
33	Pacific herring		-	General Distribution	J F M A M J J A S O N D	-	-	-	- '	Jan-Dec	Jan-
36	Chum salmon		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	Jan-Dec	Jan-
	Pink salmon		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	Jul-Dec	Jan-
	Saffron cod		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	Jan-Dec	Jan-
VFF	RTEBRATE:										
		SF	Concentration	Mapping Qualifier	Monthly Processes (Inn Das)	Cn a	vning	Eggs	Lorgo	luvoniloo	Adu
	Species	<u> </u>	Concentration		Monthly Presence (Jan-Dec)	Spav	villig	Eggs	Larvae	Juveniles	Aal
	Snow crab Crustaceans		- High	General Distribution Concentration Area	J F M A M J J A S O N D J F M A M J J A S O N D	-	-	-	-	-	
ıδ	Orustacedils		riigii	Concentration Area	JI W A W J J A S U N D	-	-	-	-	-	
ARI	NE MAMMAL:										
AR#	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Mating	Calving	Pupping	Molting		
	Beluga whale		Feeding	Vulnerable Occurrence	JASO	- wating		~~~!9	emig		
	Beluga whale		Migratory Route	Migration	A M N	-	-	-	-		
_	Gray whale		Reproductive/Feeding	Concentration Area	J A S O	-		-			
	Fin whale	Е	Feeding	Vulnerable Occurrence	JASO	-	-	-	-		
	Minke whale		Feeding	Vulnerable Occurrence	JASO	-	-	-	-		
	Bowhead whale	Е	Migratory Route	Migration	AM	-	-	-	-		
	Bowhead whale	Е	Migratory Route	Migration	ASO	-	-	-	-		
				General Distribution	J F M A M J J A S O N D	Apr-May	-	Mar-May	Apr-Jul		
12 16	Bearded seal	Т	-			, ,		,			
12 16 34	Bearded seal Polar bear Ringed seal	T T	-	General Distribution General Distribution	J F M A M J J O N D J F M A M J J A S O N D	- Apr-May	-	- Mar-Jun	- May-Jul		



#### Biology Map 4 Arctic Alaska Offshore ESI

Chukchi and Beaufort Seas



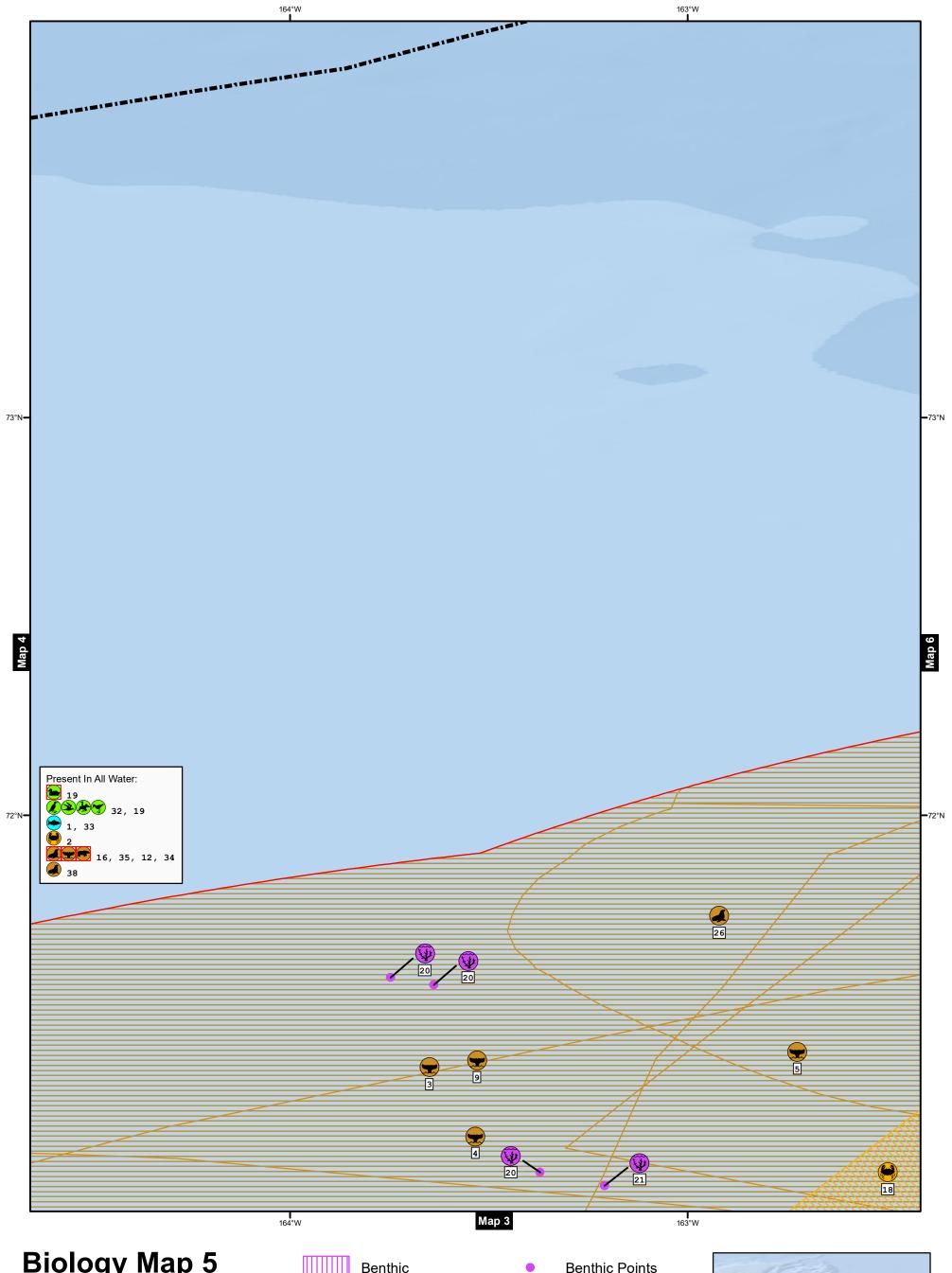


#### SEE MAP DATA TABLE



# Arctic Alaska Offshore ESI: Biology Map 4 BIOLOGICAL RESOURCES:

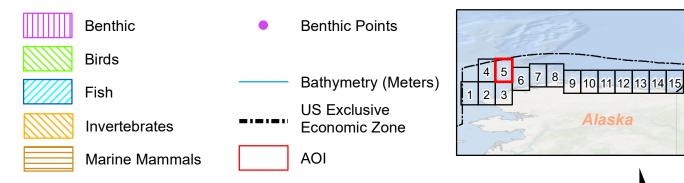
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RAR#	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)						
20	Soft coral		Solitary	Vulnerable Occurrence	J F M A M J J A S O N D						
BIRD	•										
RAR#	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Nesting	Migr	ating	Molting		
19	Arctic tern		100S	General Distribution	MJJASO	-	-	-	-		
	Black-legged kittiwake		10,000S	General Distribution	MJJASON	-	-	-	-		
	Common eider		10S	General Distribution	AMJJASON	-	Apr-Jun	Oct-Nov	Jun-Jul		
	Common murre		1,000S	General Distribution	JJASO	-	-	-	Sep-Oct		
	Glaucous-winged gull		100S	General Distribution	MJJASO	-	-	-	-		
	Glaucous gull		1,000S	General Distribution	AMJJASON	-	-	-	-		
	King eider		100S	General Distribution	AMJJASON	-	Apr-Jul	Oct-Nov	Jun-Sep		
	Long-tailed duck		100S	General Distribution	JJAS	-	-	-	Jun-Sep		
	Pacific Ioon		100S	General Distribution	MJJASO	-	Jun-Sep	-	-		
	Parasitic jaeger		100S	General Distribution	MJJASO	-	-	-	-		
	Pomarine jaeger		100S	General Distribution	MJJASO	-	-	-	-		
	Red-necked phalarope		100S	General Distribution	MJJASO	_	-	-	-		
	Red phalarope		100S	General Distribution	MJJASON	-	May-Nov	-	Aug-Sep		
	Sabine's gull		100S	General Distribution	MJJASO	-	-	-	-		
	Spectacled eider	Т	100S	General Distribution	MJJASON	-	May-Jun	Oct-Nov	Jun-Sep		
	Steller's eider	Т	10S	General Distribution	MJJASO	-	May-Oct	-	Jun-Oct		
	Thick-billed murre	•	1,000S	General Distribution	MJJASON	-	Jul-Sep	_	Aug-Nov		
	White-winged scoter		108	General Distribution	M J J A S O	-	- -	_	-		
32	Ancient murrelet		100S	General Distribution	JASO	-	-	-	_		
02	Black guillemot		100S	General Distribution	AMJJASON	_	-	_	_		
	Crested auklet		1,000S	General Distribution	JJASO	_	Aug-Oct	_	Jun-Oct		
	Horned puffin		1008	General Distribution	JJASO	_	Jun-Jun	Sep-Oct	-		
	Ivory gull		108	General Distribution	AMJJASON	_	Apr-May	Sep-Nov	_		
	Kittlitz's murrelet		1008	General Distribution	JJASON	_	-	- -	_		
	Least auklet		1,000\$	General Distribution	MAMJJASON	-	Mar-Nov	-	Jun-Oct		
	Long-tailed jaeger		1008	General Distribution	MJJASO	_	-		-		
	Loons		100S	General Distribution	AMJJASON	_	_	_	_		
	Northern fulmar		1,000S	General Distribution	JJASON		_				
	Parakeet auklet		1008	General Distribution	MAMJJASON	_	Mar-May	Aug-Nov	Jun-Nov		
	Ross's gull		100S	General Distribution	J SON	-	Jun-Jun	Sep-Nov	Juli-NOV		
	Short-tailed shearwater		1,000\$	General Distribution	AMJJASO	-	Apr-May	Sep-Oct	May-Sep		
	Tufted puffin		1008	General Distribution	FMAM SOND	-	Feb-May	Sep-Dec	-		
ISH:											
	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Spav	ning	Eggs	Larvae	Juveniles	Adult
1	Arctic cod		_	General Distribution	J F M A M J J A S O N D	Dec-Mar		Aug-Sep	Aug-Sep	Jan-Dec	Jan-De
	Bering flounder		_	General Distribution	J F M A M J J A S O N D	-	_	Aug-Aug	Aug-Aug	Jan-Dec	Jan-De
	Greenland halibut (turbot)		_	General Distribution	J F M A M J J A S O N D	_	_	, lag , lag		Jan-Dec	Jan-De
	Pacific cod		_	General Distribution	J F M A M J J A S O N D	_	_	_	_	-	oun b
	Pacific sand lance		_	General Distribution	J F M A M J J A S O N D	_	-	-	Aug-Sep	Jan-Dec	Jan-De
	Walleye pollock		_	General Distribution	J F M A M J J A S O N D	_	_	Sep-Sep	Sep-Sep	Jan-Dec	Jan-De
33	Pacific herring		-	General Distribution	J F M A M J J A S O N D	-	-	-	- -	Jan-Dec	Jan-De
NVFI	RTEBRATE:										
	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Spav	ning.	Eggs	Larvae	Juveniles	Adult
	Snow crab	3 1	-	General Distribution	J F M A M J J A S O N D			Lyys -	Laivae -	- Juverilles	- Addit
				Contra Distribution							
	NE MAMMAL:					• • • •					
	Species	S F	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Mating	Calving	Pupping	Molting		
	Beluga whale		Feeding	Vulnerable Occurrence	J A S O	-	-	-	-		
	Beluga whale		Migratory Route	Migration	A M N	-	-	-	-		
	Minke whale		Feeding	Vulnerable Occurrence	JASO	-	-	-	-		
	Bowhead whale	E	Migratory Route	Migration	ASO	-	-	-			
	Bearded seal	T	-	General Distribution	J F M A M J J A S O N D	Apr-May	-	Mar-May	Apr-Jul		
	Polar bear	T	-	General Distribution	J F M A M J J O N D	-	-	-	-		
35	Ringed seal	Т	-	General Distribution	J F M A M J J A S O N D  J J A S O N	Apr-May	-	Mar-Jun	May-Jul		
	Pacific walrus			General Distribution							



#### Biology Map 5 Arctic Alaska Offshore ESI

Chukchi and Beaufort Seas





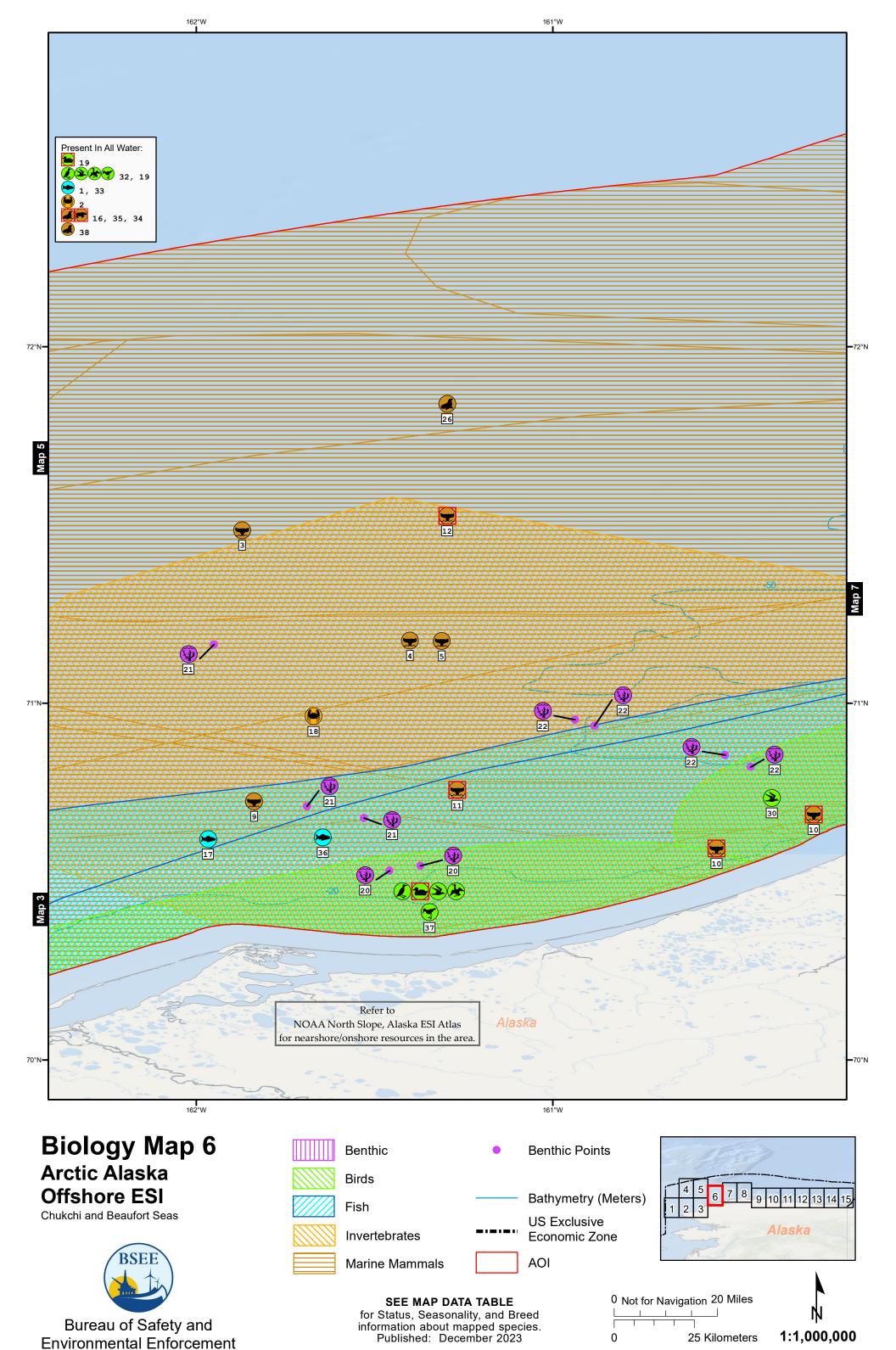
#### SEE MAP DATA TABLE

for Status, Seasonality, and Breed information about mapped species. Published: December 2023

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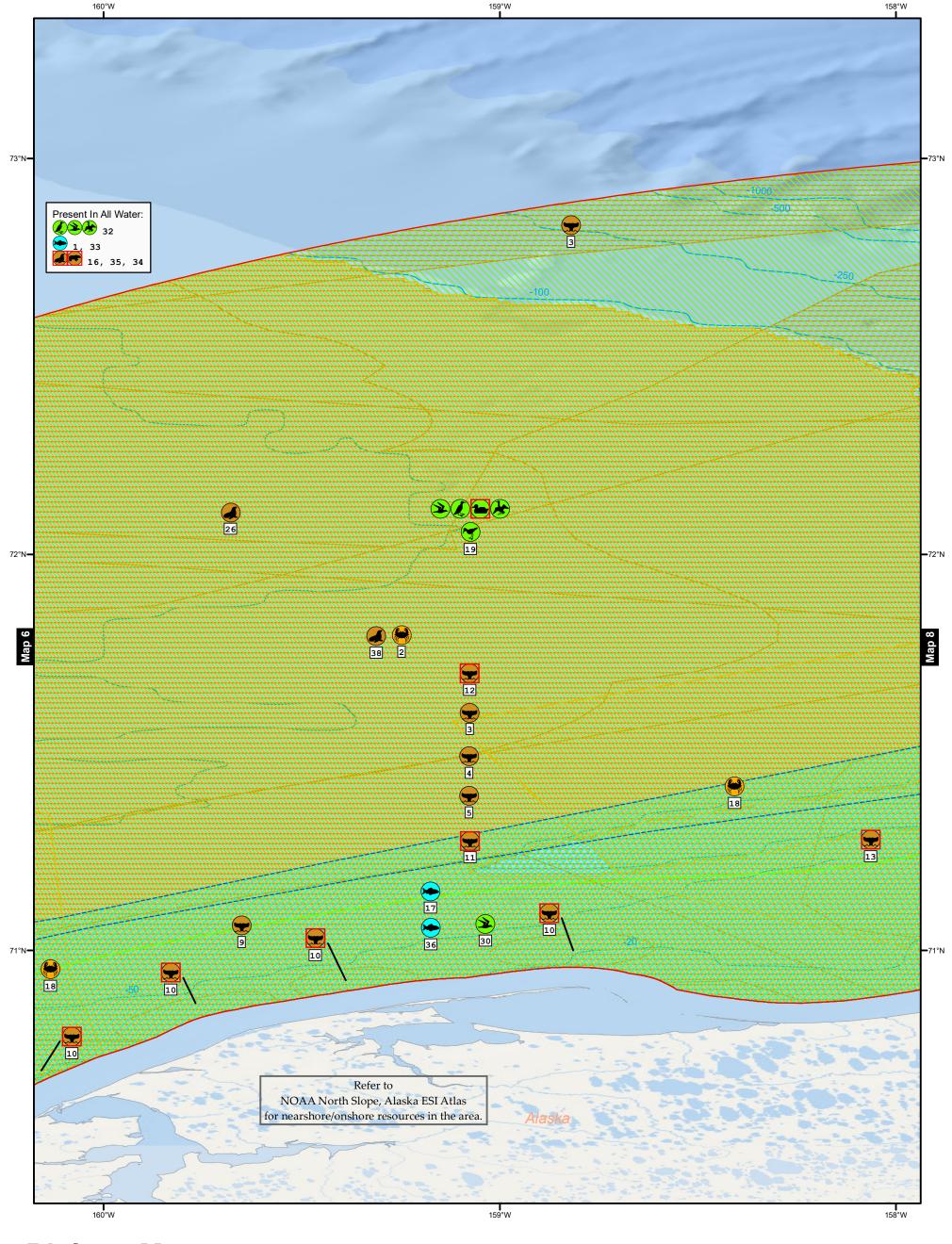
# Arctic Alaska Offshore ESI: Biology Map 5 BIOLOGICAL RESOURCES:

BENT	HIC:										
RAR#	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)						
	Soft coral		Solitary	Vulnerable Occurrence	J F M A M J J A S O N D						
	Deep sea sponge		Structure-Forming	Vulnerable Occurrence	J F M A M J J A S O N D						
21	Soft coral		Solitary	Vulnerable Occurrence	J F M A M J J A S O N D						
	Soft Colai		Solitary	vuillerable Occurrence	JIMAMJJAJOND						
BIRD:											
		0.5	0	Managin a Occalist an	Manthiba Durana (Jan Dan)	NI ti	N 45	- 41	N. 4 - 145		
-	Species	S F	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Nesting	iviigi	ating	Molting		
19	Arctic tern		100S	General Distribution	MJJASO	-	-	-	-		
	Black-legged kittiwake		10,000S	General Distribution	MJJASON	-	-	-	-		
	Common eider		10S	General Distribution	AMJJASON	-	Apr-Jun	Oct-Nov	Jun-Jul		
	Common murre		1,000S	General Distribution	J J A S O	-	-	-	Sep-Oct		
	Glaucous-winged gull		100S	General Distribution	MJJASO	-	-	-	-		
	Glaucous gull		1,000S	General Distribution	AMJJASON	-	-	-	-		
	King eider		100S	General Distribution	AMJJASON	-	Apr-Jul	Oct-Nov	Jun-Sep		
	Long-tailed duck		100S	General Distribution	J J A S	-	-	-	Jun-Sep		
	Pacific loon		100S	General Distribution	MJJASO	-	Jun-Sep	-	-		
	Parasitic jaeger		100S	General Distribution	MJJASO	-	-	-	-		
	Pomarine jaeger		100S	General Distribution	MJJASO	-	-	-	-		
	Red-necked phalarope		100S	General Distribution	MJJASO	-	-	-			
	Red phalarope		100S	General Distribution	MJJASON	-	May-Nov	-	Aug-Sep		
	Sabine's gull		100S	General Distribution	MJJASO	-		-	-		
	Spectacled eider	T	100S	General Distribution	MJJASON	-	May-Jun	Oct-Nov	Jun-Sep		
	Steller's eider	Т	10S	General Distribution	MJJASO	-	May-Oct	-	Jun-Oct		
	Thick-billed murre		1,000S	General Distribution	MJJASON	-	Jul-Sep	-	Aug-Nov		
	White-winged scoter		10S	General Distribution	MJJASO	-	-	-	-		
32	Ancient murrelet		100S	General Distribution	J A S O	-	-	-	-		
	Black guillemot		100S	General Distribution	AMJJASON	-	-	-	-		
	Crested auklet		1,000S	General Distribution	J J A S O	-	Aug-Oct	-	Jun-Oct		
	Horned puffin		100S	General Distribution	J J A S O	-	Jun-Jun	Sep-Oct	-		
	Ivory gull		10S	General Distribution	AMJJASON	-	Apr-May	Sep-Nov	-		
	Kittlitz's murrelet		100S	General Distribution	J J A S O N	-		-			
	Least auklet		1,000S	General Distribution	MAMJJASON	-	Mar-Nov	-	Jun-Oct		
	Long-tailed jaeger		100S	General Distribution	MJJASO	-	-	-	-		
	Loons		100S	General Distribution	AMJJASON	-	-	-	-		
	Northern fulmar		1,000S	General Distribution	JJASON	-	-	-			
	Parakeet auklet		100S	General Distribution	MAMJJASON	-	Mar-May	Aug-Nov	Jun-Nov		
	Ross's gull		1008	General Distribution	J SON	-	Jun-Jun	Sep-Nov	-		
	Short-tailed shearwater		1,000S	General Distribution	AMJJASO	-	Apr-May	Sep-Oct	May-Sep		
	Tufted puffin		100S	General Distribution	F M A M S O N D	-	Feb-May	Sep-Dec	-		
ISH:											
			<b>2</b>					_			
RAR#	Species	S F	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Spav	vning	Eggs	Larvae	Juveniles	Adu
1	Arctic cod		-	General Distribution	J F M A M J J A S O N D	Dec-Mar	-	Aug-Sep	Aug-Sep	Jan-Dec	Jan-D
	Bering flounder		-	General Distribution	J F M A M J J A S O N D	-	-	Aug-Aug	Aug-Aug	Jan-Dec	Jan-D
	Greenland halibut (turbot)		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	Jan-Dec	Jan-D
	Pacific cod		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	-	-
	Pacific sand lance		-	General Distribution	J F M A M J J A S O N D	-	-	-	Aug-Sep	Jan-Dec	Jan-D
	Walleye pollock		-	General Distribution	J F M A M J J A S O N D	-	-	Sep-Sep	Sep-Sep	Jan-Dec	Jan-E
33	Pacific herring		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	Jan-Dec	Jan-D
IVE	RTEBRATE:										
RAR#	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Spav	ning	Eggs	Larvae	Juveniles	Adu
	Snow crab		_	General Distribution	J F M A M J J A S O N D				_	_	
	Crustaceans		High	Concentration Area	J F M A M J J A S O N D	_	_	_	_	_	
10	C. dotteoodrilo		riigii	Sonochilation Alea							
IARI	NE MAMMAL:										
	Species	SF	Concentration	Mapping Qualifier	Monthly Processes (Jan Doc)	Matina	Calvina	Dunning	Molting		
	• •	эг			Monthly Presence (Jan-Dec)	Mating	Calving	Pupping	Molting		
	Beluga whale		Feeding	Vulnerable Occurrence	JASO	-	-	-	-		
	Beluga whale		Migratory Route	Migration	AMN	-	-	-	-		
	Gray whale		Reproductive/Feeding	Concentration Area	JASO	-	-	-	-		
	Minke whale		Feeding	Vulnerable Occurrence	JASO	-	-	-	-		
	Bowhead whale	Е	Migratory Route	Migration	ASO	-	-	-	-		
	Bearded seal	T	-	General Distribution	J F M A M J J A S O N D	Apr-May	-	Mar-May	Apr-Jul		
	Pacific walrus		High	Concentration Area	J J A S	-	-	-	-		
34	Polar bear	Т	•	General Distribution	J F M A M J J O N D	-	-	-	-		
				Canaral Distribution	J F M A M J J A S O N D	Apr-May		Mar-Jun	May-Jul		
35	Ringed seal Pacific walrus	Т	-	General Distribution General Distribution	J J A S O N	Api-iviay		Mai-Juii	May-Jul		



# Arctic Alaska Offshore ESI: Biology Map 6 BIOLOGICAL RESOURCES:

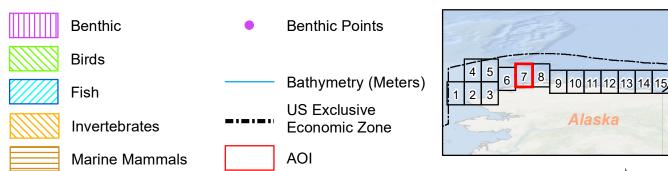
RAR#	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)						
20	Soft coral		Solitary	Vulnerable Occurrence	J F M A M J J A S O N D						
21	Deep sea sponge		Structure-Forming	Vulnerable Occurrence	J F M A M J J A S O N D						
	Soft coral		Solitary	Vulnerable Occurrence	J F M A M J J A S O N D						
22	Deep sea sponge		Structure-Forming	Vulnerable Occurrence	J F M A M J J A S O N D						
IRD											
RAR#	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Nesting	Migr	ating	Molting		
	Arctic tern		100S	General Distribution	MJJASO	-	-	-	<u>-</u>		
	Black-legged kittiwake		10,000S	General Distribution	MJJASON	-	-	-	-		
	Common eider		10S	General Distribution	AMJJASON	-	Apr-Jun	Oct-Nov	Jun-Jul		
	Common murre		1,000S	General Distribution	JJASO	-	-	-	Sep-Oct		
	Glaucous-winged gull		100S	General Distribution	MJJASO	-	-	-	-		
	Glaucous gull		1,000S	General Distribution	AMJJASON	-	- Ame Iul	Oat Nav	- Lun Con		
	King eider Long-tailed duck		100S 100S	General Distribution General Distribution	A M J J A S O N	-	Apr-Jul	Oct-Nov	Jun-Sep Jun-Sep		
	Pacific Ioon		100S	General Distribution	MJJASO	-	Jun-Sep	-	- -		
	Parasitic jaeger		1008	General Distribution	M J J A S O	-	-	-	-		
	Pomarine jaeger		100S	General Distribution	MJJASO	-	-	-	-		
	Red-necked phalarope		100S	General Distribution	MJJASO	-	-	-	-		
	Red phalarope		100S	General Distribution	MJJASON	-	May-Nov	-	Aug-Sep		
	Sabine's gull	_	100S	General Distribution	MJJASO	-	-	-	-		
	Spectacled eider	T T	100S	General Distribution	MJJASON	-	May-Jun	Oct-Nov	Jun-Sep		
	Steller's eider Thick-billed murre	ļ	10S 1,000S	General Distribution General Distribution	M J J A S O N	-	May-Oct Jul-Sep	-	Jun-Oct Aug-Nov		
	White-winged scoter		108	General Distribution	M J J A S O	-	- -	-	Aug-Nov		
30	Glaucous gull		Up To 83,836 Birds	Concentration Area	AMJJASON	- Jul-Aug	-	-	-		
	Sabine's gull		Up To 11,355 Birds	Concentration Area	MJJASO	Jul-Aug	-	-	-		
32	Ancient murrelet		100S	General Distribution	JASO	-	-	-	-		
	Black guillemot		100S	General Distribution	AMJJASON	-	-	-	-		
	Crested auklet		1,000S	General Distribution	JJASO	-	Aug-Oct	-	Jun-Oct		
	Horned puffin		100S	General Distribution	J J A S O N	-	Jun-Jun	Sep-Oct	-		
	Ivory gull Kittlitz's murrelet		10S 100S	General Distribution General Distribution	A M J J A S O N J J A S O N	-	Apr-May	Sep-Nov	-		
	Least auklet		1,000S	General Distribution  General Distribution	MAMJJASON	-	- Mar-Nov	-	- Jun-Oct		
	Long-tailed jaeger		1,000S	General Distribution	M J J A S O	-	-	-	-		
	Loons		100S	General Distribution	AMJJASON	-	-	-	-		
	Northern fulmar		1,000S	General Distribution	JJASON	-	-	-	-		
	Parakeet auklet		100S	General Distribution	MAMJJASON	-	Mar-May	Aug-Nov	Jun-Nov		
	Ross's gull		100S	General Distribution	J SON	-	Jun-Jun	Sep-Nov	-		
	Short-tailed shearwater		1,000S	General Distribution	AMJJASO	-	Apr-May	Sep-Oct	May-Sep		
0.7	Tufted puffin		100S	General Distribution	F M A M S O N D	-	Feb-May	Sep-Dec	-		
37	Black-legged kittiwake		Up To 10,000 Birds	Concentration Area	M J J A S O N	May-Aug -	Anr lun	- Oot Nov	- Jun-Jul		
	Common eider Common murre		Up To 1,000 Birds Up To 100,000 Birds	Rafting Concentration Area	A M J J A S O N J J A S O	- Jun-Sep	Apr-Jun	Oct-Nov -	Sep-Oct		
	Glaucous gull		Up To 86,836 Birds	Concentration Area	AMJJASON	- -	-	-	- -		
	Greater scaup		Up To 100 Birds	Concentration Area	M J J A S O	-	May-Oct	-	-		
	King eider		10,000S	Rafting	AMJJASON	-	Apr-Jul	Oct-Nov	Jun-Sep		
	Long-tailed duck		10,000S	Rafting	AMJJASON	-	Apr-May	Oct-Nov	Jun-Aug		
	Northern pintail		100S	Concentration Area	MJJASO	-	-	-	-		
	Pacific Ioon		1,000S	Concentration Area	MJJASO	-	Jun-Sep	-	-		
	Parasitic jaeger		100S	Concentration Area	MJJASO	-	-	-	-		
	Pomarine jaeger		Up To 2,816 Birds	Concentration Area Rafting	M J J A S O	Jun-Jul -	-	-	-		
	Red-breasted merganser Red-necked phalarope		High 1,000S	Concentration Area	M J J A S O	-	-	-	-		
	Red-throated loon		1008	Concentration Area	AMJJASO	-	Apr-Oct	-	-		
	Red phalarope		1,000S	Concentration Area	MJJASON	-	May-Nov	-	Aug-Sep		
	Shearwaters		100S	Concentration Area	JJASON	-	Aug-Sep	-	-		
	Spectacled eider	Т	Up To 33,000 Birds	Rafting	MJJASON	-	May-Jun	Oct-Nov	Jun-Sep		
	Steller's eider	Т	High	Rafting	J J A S O	Jun-Aug	Jun-Oct	-	Jun-Oct		
	Surf scoter		Up To 100 Birds	Concentration Area	MJJASON	-	-	-	Jul-Aug		
	Thick-billed murre		Up To 100,000 Birds	Concentration Area	MJJASON	May-Jul	May-May	Jul-Sep	Aug-Nov		
	White-winged scoter		High	Rafting	MJJASO	-	-	-	-		
ISH:											
RAR#	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Spav	ning	Eggs	Larvae	Juveniles	Adult
	Arctic cod			General Distribution	J F M A M J J A S O N D	Dec-Mar	-	Aug-Sep	Aug-Sep	Jan-Dec	Jan-De
'	Bering flounder		_	General Distribution	J F M A M J J A S O N D	-	-	Aug-Sep Aug-Aug	Aug-Sep Aug-Aug	Jan-Dec	Jan-De
	Greenland halibut (turbot)		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	Jan-Dec	Jan-De
	Pacific cod		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	-	-
	Pacific sand lance		-	General Distribution	J F M A M J J A S O N D	-	-	-	Aug-Sep	Jan-Dec	Jan-De
	Walleye pollock		-	General Distribution	J F M A M J J A S O N D	-	-	Sep-Sep	Sep-Sep	Jan-Dec	Jan-De
17	Capelin		-	General Distribution	J F M A M J J A S O N D	-	-	-	Sep-Sep	Jan-Dec	Jan-De
22	Yellowfin sole		-	General Distribution	J F M A M J J A S O N D	-	-	-	Sep-Sep	Jan-Dec	Jan-De
	Pacific herring Chum salmon		-	General Distribution General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D	-	-	-	-	Jan-Dec Jan-Dec	Jan-De
30	Pink salmon		-	General Distribution  General Distribution	J F M A M J J A S O N D	-	-	-	-	Jan-Dec Jul-Dec	Jan-De
	Saffron cod		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	Jan-Dec	Jan-De
NVE	RTEBRATE:										
RAR#	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Spav	ning	Eggs	Larvae	Juveniles	Adult
	Snow crab			General Distribution	J F M A M J J A S O N D	-	-	-	-	-	-
	Crustaceans		High	Concentration Area	J F M A M J J A S O N D	-	-	-	-	-	-
. A D.	NIT BAABABA										
	NE MAMMAL:										
RAR#	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Mating	Calving	Pupping	Molting		
	Beluga whale		Feeding	Vulnerable Occurrence	JASO	-	-	-	-		
	Beluga whale		Migratory Route	Migration	AMN	-	-	-	-		
	Gray whale		Reproductive/Feeding	Concentration Area	JASO	-	-	-	-		
	Minke whale	_	Feeding	Vulnerable Occurrence	JASO	-	-	-	-		
10	Bowhead whale	E	Reproductive/Feeding	Vulnerable Occurrence	M J	-	-	-	-		
	Bowhead whale Bowhead whale	E E	Migratory Route Migratory Route	Migration Migration	AM	-	-	-	-		
11		E	wilgratory Route				-				
11 12		т	<u>-</u>	General Distribution	JEMAMIIIASANI	ADI-IVIAV		Viar=IV/IaV/	Anr- Iul		
11 12 16	Bearded seal	Т	- Hiah	General Distribution Concentration Area	J F M A M J J A S O N D	Apr-May -	-	Mar-May -	Apr-Jul -		
11 12 16 26		T	- High -		JJAS	Арг-мау - -	-	маг-мау - -	Apr-Jul - -		
11 12 16 26 34	Bearded seal Pacific walrus		- High - -	Concentration Area	J J A S	Apr-May - Apr-May	-	Mar-May - - Mar-Jun	Apr-Jul - - May-Jul		





Chukchi and Beaufort Seas

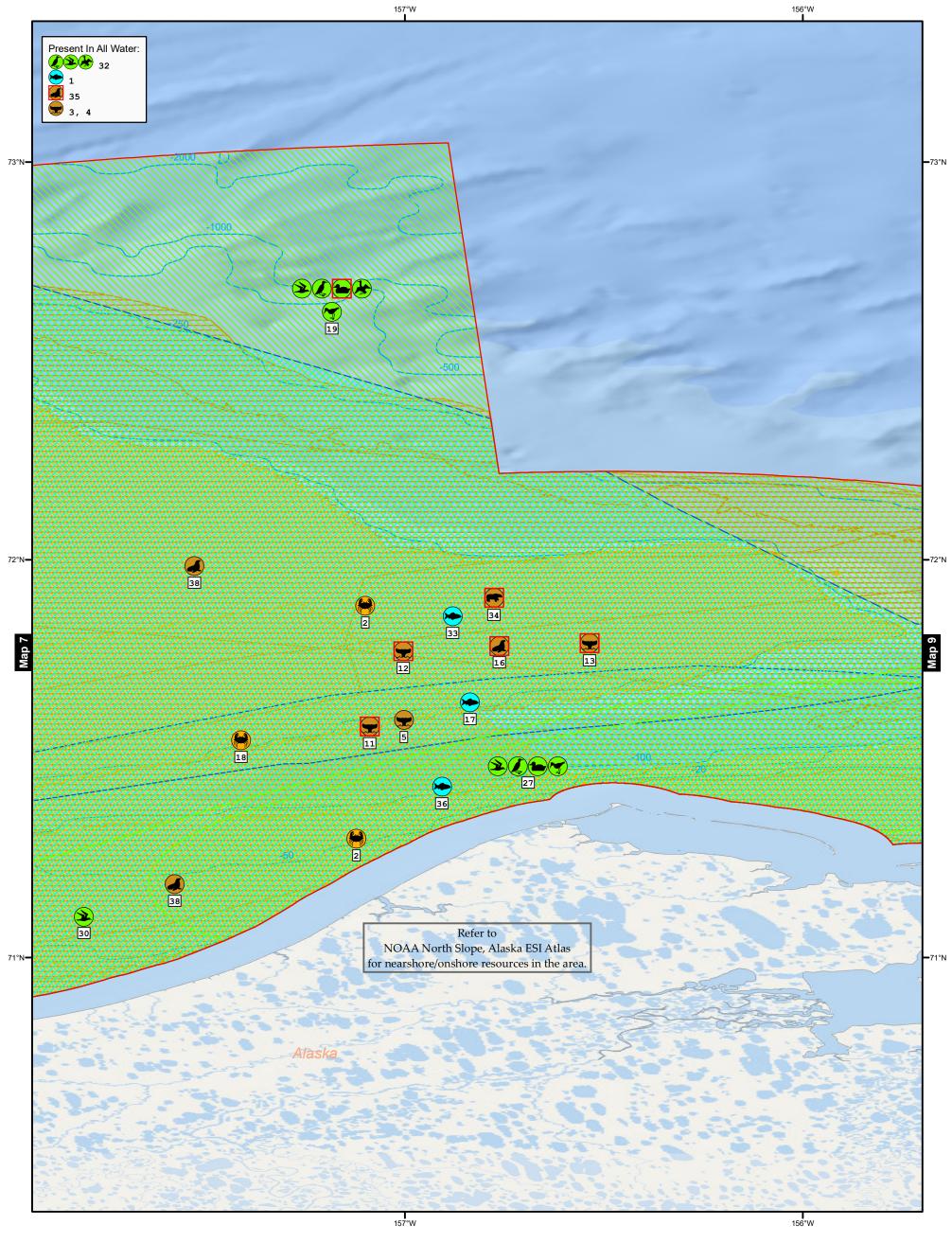




#### SEE MAP DATA TABLE

# Arctic Alaska Offshore ESI: Biology Map 7 BIOLOGICAL RESOURCES:

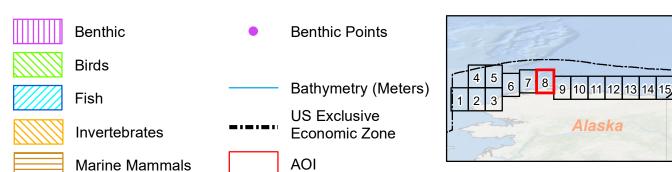
BIRD:	:										
RAR#	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Nesting	Migr	ating	Molting		
19	Arctic tern		100S	General Distribution	MJJASO	-	-	-	-		
	Black-legged kittiwake		10,000S	General Distribution	MJJASON	-	-	-	-		
	Common eider		10S	General Distribution	AMJJASON	-	Apr-Jun	Oct-Nov	Jun-Jul		
	Common murre		1,000S	General Distribution	JJASO	-	-	-	Sep-Oct		
	Glaucous-winged gull		100S	General Distribution	MJJASO	-	-	-	-		
	Glaucous gull		1,000S	General Distribution	AMJJASON	-	-	-	-		
	King eider		100S	General Distribution	AMJJASON	-	Apr-Jul	Oct-Nov	Jun-Sep		
	Long-tailed duck		100S	General Distribution	JJAS	-	-	-	Jun-Sep		
	Pacific loon		100S	General Distribution	MJJASO	-	Jun-Sep	-	-		
	Parasitic jaeger		100S	General Distribution	MJJASO	-	-	-	-		
	Pomarine jaeger		100S	General Distribution	MJJASO	-	-	-	-		
	Red-necked phalarope		100S	General Distribution	MJJASO	-	-	-	-		
	Red phalarope		100S	General Distribution	MJJASON	-	May-Nov	-	Aug-Sep		
	Sabine's gull		100S	General Distribution	MJJASO	-	-	-	-		
	Spectacled eider	Т	100S	General Distribution	MJJASON	-	May-Jun	Oct-Nov	Jun-Sep		
	Steller's eider	Т	10S	General Distribution	MJJASO	-	May-Oct	-	Jun-Oct		
	Thick-billed murre		1,000S	General Distribution	MJJASON	-	Jul-Sep	-	Aug-Nov		
	White-winged scoter		10S	General Distribution	MJJASO	-	-	-	-		
30	Glaucous gull		Up To 83,836 Birds	Concentration Area	AMJJASON	Jul-Aug	-	-	-		
	Sabine's gull		Up To 11,355 Birds	Concentration Area	MJJASO	Jul-Aug	-	-	-		
32	Ancient murrelet		100S	General Distribution	JASO	-	-	-	-		
	Black guillemot		100S	General Distribution	AMJJASON	-	-	-	-		
	Crested auklet		1,000S	General Distribution	JJASO	-	Aug-Oct	-	Jun-Oct		
	Horned puffin		100S	General Distribution	JJASO	-	Jun-Jun	Sep-Oct	-		
	lvory gull		10S	General Distribution	AMJJASON	-	Apr-May	Sep-Nov	-		
	Kittlitz's murrelet		100S	General Distribution	JJASON	-	- 1	-	-		
	Least auklet		1,000S	General Distribution	MAMJJASON	-	Mar-Nov	-	Jun-Oct		
	Long-tailed jaeger		100S	General Distribution	MJJASO	-	-	-	-		
	Loons		100S	General Distribution	AMJJASON	-	-	-	-		
	Northern fulmar		1,000S	General Distribution	JJASON	-	-	-	-		
	Parakeet auklet		100S	General Distribution	MAMJJASON	-	Mar-May	Aug-Nov	Jun-Nov		
	Ross's gull		100S	General Distribution	J SON	-	Jun-Jun	Sep-Nov	-		
	Short-tailed shearwater		1,000S	General Distribution	AMJJASO	-	Apr-May	Sep-Oct	May-Sep		
	Tufted puffin		100S	General Distribution	FMAM SOND	-	Feb-May	Sep-Dec	-		
	·										
FISH:											
RAR#	Species	S F	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Spav	vning	Eggs	Larvae	Juveniles	Adults
1	Arctic cod		-	General Distribution	J F M A M J J A S O N D	Dec-Mar	-	Aug-Sep	Aug-Sep	Jan-Dec	Jan-Dec
	Bering flounder		-	General Distribution	J F M A M J J A S O N D	-	-	Aug-Aug	Aug-Aug	Jan-Dec	Jan-Dec
	Greenland halibut (turbot)						_	_			Jan-Dec
	Oroomana nambat (tarbot)		-	General Distribution	J F M A M J J A S O N D	-	-		-	Jan-Dec	Jan-Dec
	Pacific cod		-	General Distribution General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D	-	-	-	-	Jan-Dec -	-
	, ,		- - -			- - -		-	- - Aug-Sep		- Jan-Dec
	Pacific cod		- - -	General Distribution	J F M A M J J A S O N D	- - - -	-	- - Sep-Sep		-	-
17	Pacific cod Pacific sand lance		- - - -	General Distribution General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D	- - - -	-	- - Sep-Sep -	Aug-Sep	- Jan-Dec	- Jan-Dec
17	Pacific cod Pacific sand lance Walleye pollock		- - - - -	General Distribution General Distribution General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	- - - -	-	- - Sep-Sep - -	Aug-Sep Sep-Sep	- Jan-Dec Jan-Dec	- Jan-Dec Jan-Dec
	Pacific cod Pacific sand lance Walleye pollock Capelin		- - - - - -	General Distribution General Distribution General Distribution General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	- - - - -	-	- - Sep-Sep - -	Aug-Sep Sep-Sep Sep-Sep	- Jan-Dec Jan-Dec Jan-Dec	- Jan-Dec Jan-Dec Jan-Dec
33	Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole		- - - - - -	General Distribution General Distribution General Distribution General Distribution General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	- - - - - -	- - - -	- - Sep-Sep - - - -	Aug-Sep Sep-Sep Sep-Sep	- Jan-Dec Jan-Dec Jan-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec
33	Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring		- - - - - - -	General Distribution General Distribution General Distribution General Distribution General Distribution General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	- - - - - - -		- Sep-Sep - - - -	Aug-Sep Sep-Sep Sep-Sep Sep-Sep	- Jan-Dec Jan-Dec Jan-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
33	Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon		-	General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	-	- - - - -	- - Sep-Sep - - - - -	Aug-Sep Sep-Sep Sep-Sep Sep-Sep	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
33 36	Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod		-	General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D		- - - - -	- Sep-Sep - - - - - -	Aug-Sep Sep-Sep Sep-Sep Sep-Sep	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
33 36	Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod		- -	General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	- - -		- - - - - -	Aug-Sep Sep-Sep Sep-Sep Sep-Sep - - -	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
33 36	Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod	S F	-	General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D M D J F M A M J J A S O N D M D J F M A M J J A S O N D M D M M M J J A S O N D M D M M M M J J A S O N D M D M M M M J J A S O N D M D M M M M M J J A S O N D M D M M M M M M M M M M M M M M M M	- - - - - - - - - - Spaw		- Sep-Sep - - - - - - -	Aug-Sep Sep-Sep Sep-Sep Sep-Sep	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
33 36 INVEI RAR#	Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod	S F	- -	General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D M D J F M A M J J A S O N D M D J F M A M J J A S O N D M D M A M J J A S O N D M D M A M J J A S O N D	- - -		- - - - - -	Aug-Sep Sep-Sep Sep-Sep Sep-Sep - - -	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
33 36 INVEI RAR#	Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species	S F	- -	General Distribution Mapping Qualifier	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D M D J F M A M J J A S O N D M D J F M A M J J A S O N D M D M M M J J A S O N D M D M M M M J J A S O N D M D M M M M J J A S O N D M D M M M M M J J A S O N D M D M M M M M M M M M M M M M M M M	- - -	- - - - - - - - vning	- - - - - -	Aug-Sep Sep-Sep Sep-Sep Sep-Sep - - -	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
33 36 INVEI RAR# 2 18	Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab Crustaceans	S F	- - - Concentration -	General Distribution Mapping Qualifier General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D M D J F M A M J J A S O N D M D J F M A M J J A S O N D M D M A M J J A S O N D M D M A M J J A S O N D	- - -	- - - - - - - - vning	- - - - - -	Aug-Sep Sep-Sep Sep-Sep Sep-Sep - - -	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Adults
33 36 INVEI RAR# 2 18	Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod RTEBRATE: Species Snow crab Crustaceans		- - - Concentration - High	General Distribution Mapping Qualifier General Distribution Concentration Area	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	- - - Spaw - -	- - - - - - vning -	- - - - - - Eggs -	Aug-Sep Sep-Sep Sep-Sep Sep-Sep - - - - - - - - -	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Adults
33 36 INVEI RAR# 2 18 MARI RAR#	Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod RTEBRATE: Species Snow crab Crustaceans INE MAMMAL: Species	S F	Concentration - High Concentration	General Distribution Mapping Qualifier General Distribution Concentration Area	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D D D D D D D D D D D D D D D D D	- - - Spaw - - - Mating	- - - - - - - vning - -	- - - - - -	Aug-Sep Sep-Sep Sep-Sep Molting	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Adults
33 36 INVEI RAR# 2 18 MARI RAR# 3	Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod RTEBRATE: Species Snow crab Crustaceans INE MAMMAL: Species Beluga whale		Concentration - High  Concentration Feeding	General Distribution Mapping Qualifier General Distribution Concentration Area  Mapping Qualifier Vulnerable Occurrence	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D D D D D D D D D D D D D D D D D	- - - Spaw - -	- - - - - - vning -	- - - - - - Eggs -	Aug-Sep Sep-Sep Sep-Sep Sep-Sep - - - - - - - - -	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Adults
33 36 INVEI RAR# 2 18 MARI RAR# 3 4	Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod RTEBRATE: Species Snow crab Crustaceans INE MAMMAL: Species Beluga whale Beluga whale		Concentration - High  Concentration Feeding Migratory Route	General Distribution Mapping Qualifier General Distribution Concentration Area  Mapping Qualifier Vulnerable Occurrence Migration	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J M S O N D J M S O N D J A S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S O N D J M S	- - - Spaw - - - Mating	- - - - - - - vning - -	- - - - - - Eggs -	Aug-Sep Sep-Sep Sep-Sep Molting	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Adults
33 36 INVEI RAR# 2 18 MARI RAR# 3 4 5	Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod RTEBRATE: Species Snow crab Crustaceans INE MAMMAL: Species Beluga whale Beluga whale Gray whale		Concentration  - High  Concentration Feeding Migratory Route Reproductive/Feeding	General Distribution Mapping Qualifier General Distribution Concentration Area Mapping Qualifier Vulnerable Occurrence Migration Concentration Area	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J A S O N D J A S O N D J A S O N D J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J	- - - Spaw - - - Mating	- - - - - - - vning - -	- - - - - - Eggs -	Aug-Sep Sep-Sep Sep-Sep Molting	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Adults
33 36 INVEI RAR# 2 18 MARI RAR# 3 4 5 9	Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab Crustaceans INE MAMMAL: Species Beluga whale Beluga whale Gray whale Minke whale	S F	Concentration  - High  Concentration  Feeding Migratory Route Reproductive/Feeding Feeding	General Distribution Mapping Qualifier General Distribution Concentration Area  Mapping Qualifier Vulnerable Occurrence Migration Concentration Area Vulnerable Occurrence	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S O J D J A S	- - - Spaw - - - Mating	- - - - - - - vning - -	- - - - - - Eggs -	Aug-Sep Sep-Sep Sep-Sep Molting	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Adults
33 36 INVEI RAR# 2 18 MARI RAR# 3 4 5 9	Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab Crustaceans INE MAMMAL: Species Beluga whale Beluga whale Gray whale Minke whale Bowhead whale	S F	Concentration  - High  Concentration  Feeding Migratory Route Reproductive/Feeding Feeding Reproductive/Feeding	General Distribution Mapping Qualifier General Distribution Concentration Area  Mapping Qualifier Vulnerable Occurrence Migration Concentration Area Vulnerable Occurrence Vulnerable Occurrence	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S O N D J A S	- - - Spaw - - - Mating	- - - - - - - vning - -	- - - - - - Eggs -	Aug-Sep Sep-Sep Sep-Sep Molting	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Adults
33 36 INVEI RAR# 2 18 MARI RAR# 3 4 5 9 10 11	Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab Crustaceans INE MAMMAL: Species Beluga whale Beluga whale Gray whale Minke whale Bowhead whale Bowhead whale	S F	Concentration  - High  Concentration  Feeding Migratory Route Reproductive/Feeding Feeding Reproductive/Feeding Migratory Route	General Distribution Mapping Qualifier General Distribution Concentration Area  Mapping Qualifier Vulnerable Occurrence Migration Concentration Area Vulnerable Occurrence Vulnerable Occurrence Migration	J F M A M J J A S O N D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D D J F M A M J J A S O N D D D D D D D D D D D D D D D D D D	- - - Spaw - - - Mating	Calving	- - - - - - Eggs -	Aug-Sep Sep-Sep Sep-Sep Sep-Sep  Larvae  Molting	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Adults
33 36 INVEI RAR# 2 18 MARI RAR# 3 4 5 9 10 11 12	Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab Crustaceans INE MAMMAL: Species Beluga whale Beluga whale Gray whale Minke whale Bowhead whale Bowhead whale Bowhead whale Bowhead whale	S F	Concentration  - High  Concentration  Feeding Migratory Route Reproductive/Feeding Feeding Reproductive/Feeding Migratory Route Migratory Route Migratory Route	General Distribution  Mapping Qualifier General Distribution Concentration Area  Mapping Qualifier  Vulnerable Occurrence Migration Concentration Area  Vulnerable Occurrence Vulnerable Occurrence Migration Migration Migration	J F M A M J J A S O N D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D D D D D D D D D D D D D D D D D	- - - Spaw - - - Mating	- - - - - - - vning - -	- - - - - - Eggs -	Aug-Sep Sep-Sep Sep-Sep Molting	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Adults
33 36 INVEI RAR# 2 18 MARI RAR# 3 4 5 9 10 11 12 13	Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab Crustaceans INE MAMMAL: Species Beluga whale Beluga whale Gray whale Minke whale Bowhead whale Bowhead whale Bowhead whale Bowhead whale Bowhead whale Bowhead whale	S F E E E	Concentration  - High  Concentration  Feeding Migratory Route Reproductive/Feeding Feeding Reproductive/Feeding Migratory Route	General Distribution  Mapping Qualifier General Distribution Concentration Area  Mapping Qualifier  Vulnerable Occurrence Migration Concentration Area  Vulnerable Occurrence Vulnerable Occurrence Migration Migration Vulnerable Occurrence	J F M A M J J A S O N D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D D D D D D D D D D D D D D D D D	- - - Spaw - - - - - - - - -			Aug-Sep Sep-Sep Sep-Sep Sep-Sep Molting	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Adults
33 36 INVEI RAR# 2 18 MARI RAR# 3 4 5 9 10 11 12 13 16	Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod RTEBRATE: Species Snow crab Crustaceans INE MAMMAL: Species Beluga whale Beluga whale Gray whale Minke whale Bowhead whale	S F	Concentration  - High  Concentration  Feeding Migratory Route Reproductive/Feeding Feeding Migratory Route Reproductive/Feeding Migratory Route Migratory Route Reproductive/Feeding	General Distribution  Mapping Qualifier General Distribution Concentration Area  Mapping Qualifier  Vulnerable Occurrence Migration Concentration Area  Vulnerable Occurrence Vulnerable Occurrence Migration Migration Vulnerable Occurrence General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D D D D D D D D D D D D D D D D D	- - - Spaw - - - Mating	Calving	- - - - - - Eggs -	Aug-Sep Sep-Sep Sep-Sep Sep-Sep  Larvae  Molting	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Adults
33 36 INVEI RAR# 2 18 MARI RAR# 3 4 5 9 10 11 12 13 16 26	Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab Crustaceans  INE MAMMAL: Species Beluga whale Beluga whale Gray whale Minke whale Bowhead seal Pacific walrus	S F E E E T	Concentration  - High  Concentration  Feeding Migratory Route Reproductive/Feeding Feeding Reproductive/Feeding Migratory Route Migratory Route Migratory Route	General Distribution  Mapping Qualifier General Distribution Concentration Area  Mapping Qualifier  Vulnerable Occurrence Migration Concentration Area  Vulnerable Occurrence Vulnerable Occurrence Migration Migration Vulnerable Occurrence General Distribution Concentration Area	J F M A M J J A S O N D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D D D D D D D D D D D D D D D D D	- - - Spaw - - - - - - - - -			Aug-Sep Sep-Sep Sep-Sep Sep-Sep Molting	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Adults
33 36 INVEI RAR# 2 18 MARI RAR# 3 4 5 9 10 11 12 13 16 26 34	Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab Crustaceans  INE MAMMAL: Species Beluga whale Beluga whale Gray whale Minke whale Bowhead whale	S F  E E E T	Concentration  - High  Concentration  Feeding Migratory Route Reproductive/Feeding Feeding Migratory Route Reproductive/Feeding Migratory Route Migratory Route Reproductive/Feeding	General Distribution  Mapping Qualifier General Distribution Concentration Area  Mapping Qualifier  Vulnerable Occurrence Migration Concentration Area  Vulnerable Occurrence Vulnerable Occurrence Migration Vulnerable Occurrence General Distribution Concentration Area General Distribution	J F M A M J J A S O N D	Spaw Mating			Aug-Sep Sep-Sep Sep-Sep Sep-Sep Molting Apr-Jul	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Adults
33 36 INVEI RAR# 2 18 MARI RAR# 3 4 5 9 10 11 12 13 16 26 34 35	Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab Crustaceans  INE MAMMAL: Species Beluga whale Beluga whale Gray whale Minke whale Bowhead seal Pacific walrus	S F E E E T	Concentration  - High  Concentration  Feeding Migratory Route Reproductive/Feeding Feeding Migratory Route Reproductive/Feeding Migratory Route Migratory Route Reproductive/Feeding	General Distribution  Mapping Qualifier General Distribution Concentration Area  Mapping Qualifier  Vulnerable Occurrence Migration Concentration Area  Vulnerable Occurrence Vulnerable Occurrence Migration Migration Vulnerable Occurrence General Distribution Concentration Area	J F M A M J J A S O N D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D D D D D D D D D D D D D D D D D	- - - Spaw - - - - - - - - -			Aug-Sep Sep-Sep Sep-Sep Sep-Sep Molting	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Adults



#### Biology Map 8 Arctic Alaska Offshore ESI

Chukchi and Beaufort Seas

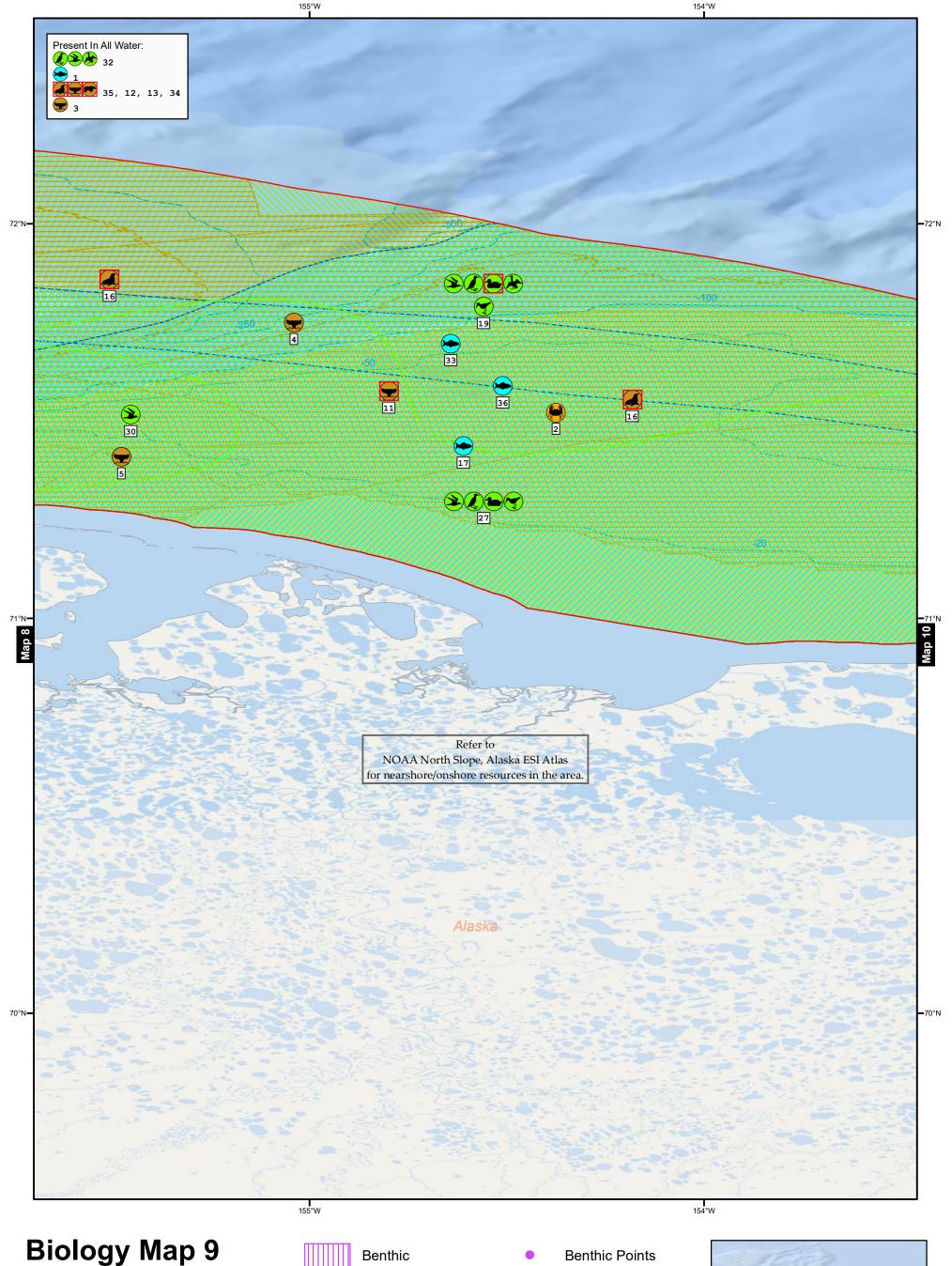




#### SEE MAP DATA TABLE

#### Arctic Alaska Offshore ESI: Biology Map 8 BIOLOGICAL RESOURCES:

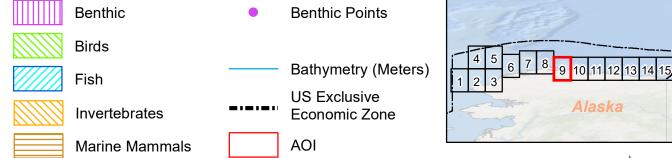
BIRD	:										
	Species	S F	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Nesting	Miar	ating	Molting		
	Arctic tern	<u> </u>	1008	General Distribution	M J J A S O	- INCOURTS	- Iviigi	-	- Worting		
19	Black-legged kittiwake		10,000S	General Distribution	MJJASON	-	-	-	-		
	Common eider		10,0003	General Distribution	AMJJASON	-	- Apr-Jun	Oct-Nov	Jun-Jul		
	Common murre		1,000S	General Distribution	JJASO	-	Api-Juli -	-	Sep-Oct		
	Glaucous-winged gull		1,000S	General Distribution	MJJASO	_	-	-	- -		
	Glaucous gull		1,000S	General Distribution	AMJJASON	-	-	-	-		
	King eider		1,000S 100S	General Distribution	AMJJASON	-	- Apr-Jul	- Oct-Nov	Jun-Sep		
	Long-tailed duck		100S	General Distribution	JJAS	-	Api-Jui	Oct-Nov	Jun-Sep		
	Pacific loon		100S	General Distribution	MJJASO	-	- Jun-Sep	-	Juli-Sep -		
	Parasitic jaeger		100S	General Distribution	MJJASO	-	Juli-Sep	-	-		
	Pomarine jaeger		100S	General Distribution	MJJASO	-	-	-	-		
	Red-necked phalarope		100S	General Distribution	MJJASO	-	-	-	-		
	Red phalarope		100S	General Distribution	MJJASON	-	- May-Nov	-	- Aug-Sep		
	Sabine's gull		100S	General Distribution	MJJASO	-	iviay-ivov	-	Aug-Sep		
		-	100S 100S	General Distribution	MJJASON	-		Oct-Nov	Jun-Sep		
	Spectacled eider Steller's eider	T	100S 10S			-	May-Jun		Jun-Sep Jun-Oct		
			1,000S	General Distribution	MJJASO	-	May-Oct	-			
	Thick-billed murre		1,000S 10S	General Distribution	MJJASON	-	Jul-Sep	-	Aug-Nov		
07	White-winged scoter			General Distribution	MJJASO	-	-	-	-		
21	Arctic tern		Up To 42,123 Birds	Concentration Area	MJJASO	Jul-Aug	-	-	-		
	Black-legged kittiwake		Up To 124,877 Birds	Concentration Area	MJJASON	May-Aug	- ^	- O-4 N	-		
	King eider		Up To 102,000 Birds	Concentration Area	AMJJASON	Jun-Sep	Apr-Jul	Oct-Nov	Jun-Sep		
	Long-tailed duck		Up To 227,259 Birds	Concentration Area	AMJJASON	May-Aug	Apr-May	Oct-Nov	Jun-Aug		
- 00	Red phalarope		Up To 41,445 Birds	Concentration Area	MJJASON	Jun-Aug	May-Nov	-	Aug-Sep		
30	Glaucous gull		Up To 83,836 Birds	Concentration Area	AMJJASON	Jul-Aug	-	-	-		
00	Sabine's gull		Up To 11,355 Birds	Concentration Area	MJJASO	Jul-Aug	-	-	-		
32	Ancient murrelet		100S	General Distribution	JASO	-	-	-	-		
	Black guillemot		100S	General Distribution	AMJJASON	-	-	-	-		
	Crested auklet		1,000S	General Distribution	JJASO	-	Aug-Oct	-	Jun-Oct		
	Horned puffin		100S	General Distribution	J J A S O	-	Jun-Jun	Sep-Oct	-		
	Ivory gull		108	General Distribution	AMJJASON	-	Apr-May	Sep-Nov	-		
	Kittlitz's murrelet		100S	General Distribution	J J A S O N	-	-	-	-		
	Least auklet		1,000S	General Distribution	MAMJJASON	-	Mar-Nov	-	Jun-Oct		
	Long-tailed jaeger		100S	General Distribution	MJJASO	-	-	-	-		
	Loons		100S	General Distribution	AMJJASON	-	-	-	-		
	Northern fulmar		1,000S	General Distribution	J J A S O N	-	-	-	-		
	Parakeet auklet		100S	General Distribution	MAMJJASON	-	Mar-May	Aug-Nov	Jun-Nov		
	Ross's gull		100S	General Distribution	J SON	-	Jun-Jun	Sep-Nov	-		
	Short-tailed shearwater		1,000S	General Distribution	AMJJASO	-	Apr-May	Sep-Oct	May-Sep		
	Tufted puffin		100S	General Distribution	F M A M S O N D	-	Feb-May	Sep-Dec	-		
ISH:											
	Species	S F	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Spaw	uning.	Eggs	Loruso	luvoniloo	A dulta
		Э.Г.	Concentration			<u> </u>	villig	Eggs	Larvae	Juveniles	Adults
1	Arctic cod		-	General Distribution	J F M A M J J A S O N D	Dec-Mar	-	Aug-Sep	Aug-Sep	Jan-Dec	Jan-De
	Bering flounder		-	General Distribution	J F M A M J J A S O N D	-	-	Aug-Aug	Aug-Aug	Jan-Dec	Jan-De
	Greenland halibut (turbot)		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	Jan-Dec	Jan-De
	Pacific cod		-	General Distribution	J F M A M J J A S O N D	-	-	-			
	Pacific sand lance		-	General Distribution	J F M A M J J A S O N D	-	-	-	Aug-Sep	Jan-Dec	Jan-De
	Walleye pollock		-	General Distribution	J F M A M J J A S O N D	-	-	Sep-Sep	Sep-Sep	Jan-Dec	Jan-De
17	Capelin		-	General Distribution	J F M A M J J A S O N D	-	-	-	Sep-Sep	Jan-Dec	Jan-De
	Yellowfin sole		-	General Distribution	J F M A M J J A S O N D	-	-	-	Sep-Sep	Jan-Dec	Jan-De
	Pacific herring		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	Jan-Dec	Jan-De
36	Chum salmon		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	Jan-Dec	Jan-De
	Pink salmon		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	Jul-Dec	Jan-De
	Saffron cod		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	Jan-Dec	Jan-De
VFI	RTEBRATE:										
		o -	0	Mana 1 0 115	Mandala B	_		_		La P	
	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Spav	vning	Eggs	Larvae	Juveniles	Adults
•			-	General Distribution	J F M A M J J A S O N D	-	-	-	-	-	-
-	Snow crab			Concentration Area	J F M A M J J A S O N D	-	-	-	-	-	-
2	Snow crab Crustaceans		High	Concentiation Area							
2 18	Crustaceans		High	Concentiation Area							
2 18	Crustaceans  NE MAMMAL:	_						_			
2 18 <b>IARI</b>	Crustaceans	S F	High  Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Mating	Calving	Pupping	Molting		
2 18 <b>IARI</b> RAR#	Crustaceans  NE MAMMAL:	SF			Monthly Presence (Jan-Dec)	Mating -	Calving -	Pupping -	Molting -		
2 18 <b>1ARI</b> RAR# 3 4	Crustaceans  NE MAMMAL:  Species  Beluga whale Beluga whale	S F	Concentration	Mapping Qualifier				Pupping - -			
2 18 <b>IARI</b> RAR# 3 4	Crustaceans  NE MAMMAL:  Species  Beluga whale	SF	Concentration Feeding	Mapping Qualifier Vulnerable Occurrence	JASO	-	-	Pupping	-		
2 18 MARI RAR# 3 4 5	Crustaceans  NE MAMMAL:  Species  Beluga whale Beluga whale	S F	Concentration Feeding Migratory Route	Mapping Qualifier  Vulnerable Occurrence  Migration	J A S O	-	-	Pupping	-		
2 18 <b>IARI</b> RAR# 3 4 5	Crustaceans  NE MAMMAL:  Species  Beluga whale Beluga whale Gray whale		Concentration Feeding Migratory Route Reproductive/Feeding	Mapping Qualifier  Vulnerable Occurrence  Migration  Concentration Area	J A S O N J A S O	-	-	Pupping	-		
2 18 IARI RAR# 3 4 5 11	Crustaceans  NE MAMMAL:  Species  Beluga whale Beluga whale Gray whale  Bowhead whale	E	Concentration Feeding Migratory Route Reproductive/Feeding Migratory Route Migratory Route	Mapping Qualifier  Vulnerable Occurrence  Migration  Concentration Area  Migration	J A S O N N J A S O A M A S O	-	-	Pupping	- - - -		
2 18 <b>//ARI</b> RAR# 3 4 5 11 12 13	Crustaceans  NE MAMMAL:  Species  Beluga whale  Beluga whale  Gray whale  Bowhead whale  Bowhead whale	E E	Concentration Feeding Migratory Route Reproductive/Feeding Migratory Route	Mapping Qualifier  Vulnerable Occurrence  Migration  Concentration Area  Migration  Migration	J A S O N J A S O A M	-	-	Pupping Mar-May			
2 18 <b>//ARI</b> RAR# 3 4 5 11 12 13 16	Crustaceans  NE MAMMAL:  Species  Beluga whale Beluga whale Gray whale Bowhead whale Bowhead whale Bowhead whale Bowhead whale Bowhead seal	E E E	Concentration Feeding Migratory Route Reproductive/Feeding Migratory Route Migratory Route	Mapping Qualifier  Vulnerable Occurrence  Migration  Concentration Area  Migration  Migration  Vulnerable Occurrence  General Distribution	J A S O N D	-	-	-	- - - -		
2 18 MARI RAR# 3 4 5 11 12 13 16 34	Crustaceans  NE MAMMAL:  Species  Beluga whale Beluga whale Gray whale Bowhead whale Bowhead whale Bowhead whale	E E E T	Concentration Feeding Migratory Route Reproductive/Feeding Migratory Route Migratory Route Reproductive/Feeding	Mapping Qualifier  Vulnerable Occurrence  Migration  Concentration Area  Migration  Migration  Vulnerable Occurrence	J A S O N N J A S O J A S O J A S O J A S O J A S O	-	-	-			



#### Biology Map 9 Arctic Alaska Offshore ESI

Chukchi and Beaufort Seas

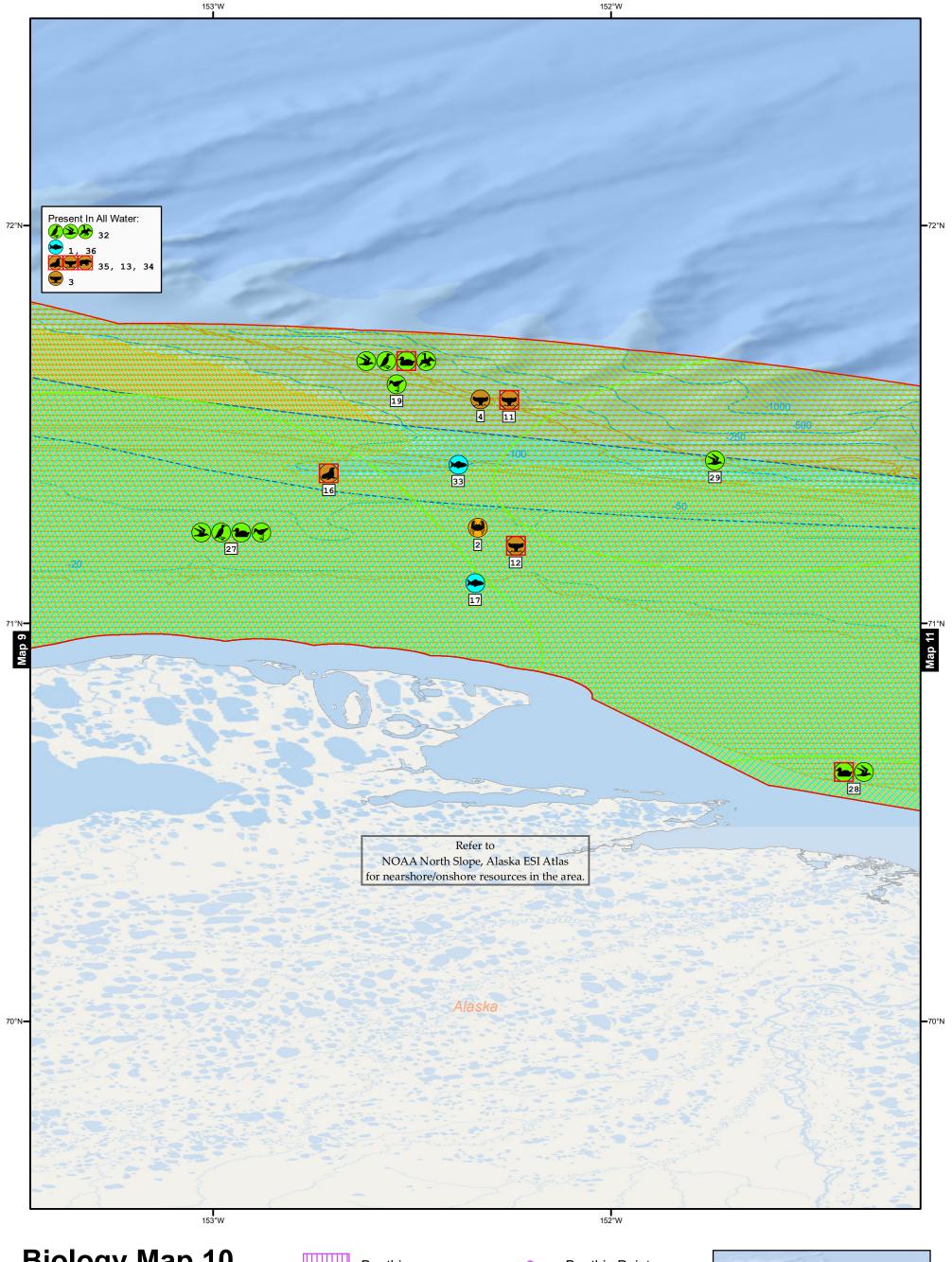




#### SEE MAP DATA TABLE

#### Arctic Alaska Offshore ESI: Biology Map 9 BIOLOGICAL RESOURCES:

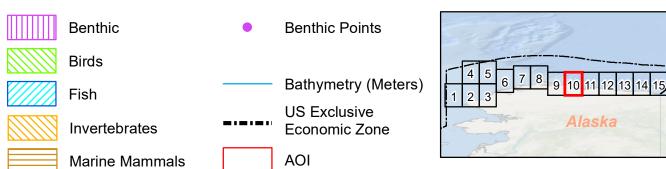
RAR#	Species	S F	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Nesting	Migr	ating	Molting		
19	Arctic tern		100S	General Distribution	MJJASO	-	-	-	-		
	Black-legged kittiwake		10,000S	General Distribution	MJJASON	-	-	-	-		
	Common eider		108	General Distribution	AMJJASON	-	Apr-Jun	Oct-Nov	Jun-Jul		
	Common murre		1,000S	General Distribution	JJASO	_	· ·	-	Sep-Oct		
	Glaucous-winged gull		100S	General Distribution	MJJASO	-	-	-			
	Glaucous gull		1,000S	General Distribution	AMJJASON	-	-	_	-		
	King eider		100S	General Distribution	AMJJASON	-	Apr-Jul	Oct-Nov	Jun-Sep		
	Long-tailed duck		1008	General Distribution	JJAS	_	7 tpr our	-	Jun-Sep		
	Pacific Ioon		1008	General Distribution	MJJASO	-	Jun-Sep	-	- -		
	Parasitic jaeger		1005	General Distribution	MJJASO	-	Juli-Sep	-	-		
	Pomarine jaeger		1005	General Distribution	MJJASO	-	-	-	-		
	, ,		1005	General Distribution	MJJASO	-	-	-	-		
	Red-necked phalarope					-		-	- ^		
	Red phalarope		1008	General Distribution	MJJASON	-	May-Nov	-	Aug-Sep		
	Sabine's gull	_	100S	General Distribution	MJJASO	-	-	-	-		
	Spectacled eider	T	100S	General Distribution	MJJASON	-	May-Jun	Oct-Nov	Jun-Sep		
	Steller's eider	T	10S	General Distribution	M J J A S O	-	May-Oct	-	Jun-Oct		
	Thick-billed murre		1,000S	General Distribution	M J J A S O N	-	Jul-Sep	-	Aug-Nov		
	White-winged scoter		10S	General Distribution	MJJASO	-	-	-	-		
27	Arctic tern		Up To 42,123 Birds	Concentration Area	MJJASO	Jul-Aug	-	-	-		
	Black-legged kittiwake		Up To 124,877 Birds	Concentration Area	MJJASON	May-Aug	-	-	-		
	King eider		Up To 102,000 Birds	Concentration Area	AMJJASON	Jun-Sep	Apr-Jul	Oct-Nov	Jun-Sep		
	Long-tailed duck		Up To 227,259 Birds	Concentration Area	AMJJASON	May-Aug	Apr-May	Oct-Nov	Jun-Aug		
	Red phalarope		Up To 41,445 Birds	Concentration Area	MJJASON	Jun-Aug	May-Nov	-	Aug-Sep		
30	Glaucous gull		Up To 83,836 Birds	Concentration Area	AMJJASON	Jul-Aug	-	-	-		
	Sabine's gull		Up To 11,355 Birds	Concentration Area	M J J A S O	Jul-Aug	-	-	-		
32	Ancient murrelet		100S	General Distribution	JASO	-	-	-	-		
	Black guillemot		100S	General Distribution	AMJJASON	-	-	-	-		
	Crested auklet		1,000S	General Distribution	JJASO	-	Aug-Oct	-	Jun-Oct		
	Horned puffin		100S	General Distribution	JJASO	-	Jun-Jun	Sep-Oct	-		
	lvory gull		10S	General Distribution	AMJJASON	-	Apr-May	Sep-Nov	-		
	Kittlitz's murrelet		100S	General Distribution	JJASON	_	-	-	_		
	Least auklet		1,000S	General Distribution	MAMJJASON	_	Mar-Nov		Jun-Oct		
	Long-tailed jaeger		1008	General Distribution	MJJASO	_	-	_	-		
	Loons		1005	General Distribution	AMJJASON	-	-	-	-		
						-			-		
	Northern fulmar		1,000S	General Distribution	JJASON	-	-	-			
	Parakeet auklet		100S	General Distribution	M A M J J A S O N	-	Mar-May	Aug-Nov	Jun-Nov		
	Ross's gull		100S	General Distribution	J SON	-	Jun-Jun	Sep-Nov			
	Short-tailed shearwater		1,000S	General Distribution	A M J J A S O	-	Apr-May	Sep-Oct	May-Sep		
	Tufted puffin		100S	General Distribution	F M A M S O N D	-	Feb-May	Sep-Dec	-		
FISH:											
		О Г	Camaantuatian	Manaina Ovalifian	Manthly Dassans (Isa Das)	C		F	1	le mera alla a	مادياد
	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Spaw	ning	Eggs	Larvae	Juveniles	Adults
1	Arctic cod		-	General Distribution	J F M A M J J A S O N D	Dec-Mar	-	Aug-Sep	Aug-Sep	Jan-Dec	Jan-Ded
	Bering flounder		-	General Distribution	J F M A M J J A S O N D	-	-	Aug-Aug	Aug-Aug	Jan-Dec	Jan-Dec
	Greenland halibut (turbot)		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	Jan-Dec	Jan-Ded
	Pacific cod		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	-	-
	Pacific sand lance						-	-	Aug-Sep	Ion Doo	Jan-Ded
	racilic saliu lalice		-	General Distribution	J F M A M J J A S O N D	-			Aug-Sep	Jan-Dec	Juli-DC
	Walleye pollock		-	General Distribution General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D	-	-	Sep-Sep	Sep-Sep	Jan-Dec Jan-Dec	
17			- - -			-					Jan-Dec
17	Walleye pollock Capelin		-	General Distribution General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D	-	-		Sep-Sep Sep-Sep	Jan-Dec Jan-Dec	Jan-Ded Jan-Ded
	Walleye pollock Capelin Yellowfin sole		-	General Distribution General Distribution General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	-	- - -	Sep-Sep - -	Sep-Sep Sep-Sep Sep-Sep	Jan-Dec Jan-Dec Jan-Dec	Jan-Ded Jan-Ded Jan-Ded
33	Walleye pollock Capelin Yellowfin sole Pacific herring		-	General Distribution General Distribution General Distribution General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	- - - -	-		Sep-Sep Sep-Sep	Jan-Dec Jan-Dec Jan-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec
33	Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon		- - - - -	General Distribution General Distribution General Distribution General Distribution General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	-	- - - -	Sep-Sep - -	Sep-Sep Sep-Sep Sep-Sep	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec
33	Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon		- - - - -	General Distribution General Distribution General Distribution General Distribution General Distribution General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	- - - -	-	Sep-Sep - -	Sep-Sep Sep-Sep Sep-Sep	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
33	Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon		- - - - - -	General Distribution General Distribution General Distribution General Distribution General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	-	- - - -	Sep-Sep - -	Sep-Sep Sep-Sep Sep-Sep	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec
33 36	Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon		- - - - - - -	General Distribution General Distribution General Distribution General Distribution General Distribution General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	- - - -	-	Sep-Sep - -	Sep-Sep Sep-Sep Sep-Sep	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
33 36 <b>NVEF</b>	Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod	S F	- - -	General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	- - - -		Sep-Sep	Sep-Sep Sep-Sep Sep-Sep - - - -	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
33 36 <b>NVEF</b> RAR#	Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod RTEBRATE: Species	S F	- - - - - - - Concentration	General Distribution Mapping Qualifier	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D M D J F M A M J J A S O N D M D J F M A M J J A S O N D M D M M M J J A S O N D M D M M M J J A S O N D M M M M J J A S O N D M M M M J J A S O N D M M M M J J A S O N D M M M M M J J A S O N D M M M M M M M M M M J J A S O N D M M M M M M M M M M M M M M M M M M	- - - -		Sep-Sep - -	Sep-Sep Sep-Sep Sep-Sep	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
33 36 <b>NVEF</b> RAR#	Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod	S F	- - -	General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	- - - -		Sep-Sep	Sep-Sep Sep-Sep Sep-Sep - - - -	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
33 36 <b>NVEF</b> RAR# 2	Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod RTEBRATE: Species	SF	- - -	General Distribution Mapping Qualifier	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D M D J F M A M J J A S O N D M D J F M A M J J A S O N D M D M M M J J A S O N D M D M M M J J A S O N D M M M M J J A S O N D M M M M J J A S O N D M M M M J J A S O N D M M M M M J J A S O N D M M M M M M M M M M J J A S O N D M M M M M M M M M M M M M M M M M M	- - - -		Sep-Sep	Sep-Sep Sep-Sep Sep-Sep - - - -	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
33 36 <b>NVEF</b> RAR# 2	Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab		- - -	General Distribution Mapping Qualifier General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D M D J F M A M J J A S O N D M D J F M A M J J A S O N D D	- - - -	- - - - - - - vning	Sep-Sep	Sep-Sep Sep-Sep Sep-Sep Larvae	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
33 36 NVEF RAR# 2 MARI	Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod RTEBRATE: Species Snow crab NE MAMMAL: Species	S F	Concentration - Concentration	General Distribution Mapping Qualifier General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D M D J F M A M J J A S O N D M D J F M A M J J A S O N D M D Monthly Presence (Jan-Dec)  Monthly Presence (Jan-Dec)	- - - - - - Spaw	- - - - - - 'ning -	Sep-Sep	Sep-Sep Sep-Sep Sep-Sep Molting	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
33 36 <b>NVEF</b> RAR# 2 <b>MARI</b> RAR#	Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod RTEBRATE: Species Snow crab NE MAMMAL: Species Beluga whale		Concentration - Concentration Feeding	General Distribution  Mapping Qualifier General Distribution  Mapping Qualifier Vulnerable Occurrence	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D M D J F M A M J J A S O N D M D Monthly Presence (Jan-Dec)  Monthly Presence (Jan-Dec)	- - - - - - Spaw	- - - - - - vning - Calving	Sep-Sep	Sep-Sep Sep-Sep Sep-Sep Molting	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
33 36 NVEF RAR# 2 WARII RAR# 3 4	Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod RTEBRATE: Species Snow crab NE MAMMAL: Species Beluga whale Beluga whale		Concentration Concentration Feeding Migratory Route	General Distribution  Mapping Qualifier General Distribution  Mapping Qualifier Vulnerable Occurrence Migration	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D  Monthly Presence (Jan-Dec)  Monthly Presence (Jan-Dec)  Monthly Presence (Jan-Dec)	- - - - - Spaw - Mating -		Sep-Sep	Sep-Sep Sep-Sep Sep-Sep Molting	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
33 36 <b>NVEF</b> RAR# 2 <b>MARI</b> RAR# 3 4 5	Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod RTEBRATE: Species Snow crab NE MAMMAL: Species Beluga whale Beluga whale Gray whale	S F	Concentration - Concentration Feeding Migratory Route Reproductive/Feeding	General Distribution  Mapping Qualifier General Distribution  Mapping Qualifier Vulnerable Occurrence Migration Concentration Area	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D Monthly Presence (Jan-Dec)  Monthly Presence (Jan-Dec)  Monthly Presence (Jan-Dec)  Monthly Presence (Jan-Dec)	- - - - - - Spaw	- - - - - - vning - Calving	Sep-Sep	Sep-Sep Sep-Sep Sep-Sep Molting	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
33 36 NVEF RAR# 2 VARII RAR# 3 4 5 11	Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod RTEBRATE: Species Snow crab NE MAMMAL: Species Beluga whale Beluga whale Gray whale Bowhead whale	S F	Concentration  Concentration  Concentration  Feeding Migratory Route Reproductive/Feeding Migratory Route	General Distribution  Mapping Qualifier General Distribution  Mapping Qualifier Vulnerable Occurrence Migration Concentration Area Migration	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D M D Monthly Presence (Jan-Dec)  Monthly Presence (Jan-Dec)  Monthly Presence (Jan-Dec)  Monthly Presence (Jan-Dec)	- - - - - Spaw - Mating -		Sep-Sep	Sep-Sep Sep-Sep Sep-Sep Molting	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
33 36 NVEF RAR# 2 WARII RAR# 3 4 5 11 12	Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod RTEBRATE: Species Snow crab NE MAMMAL: Species Beluga whale Beluga whale Gray whale Bowhead whale Bowhead whale	S F E E	Concentration - Concentration Feeding Migratory Route Reproductive/Feeding Migratory Route Migratory Route Migratory Route	General Distribution  Mapping Qualifier General Distribution  Mapping Qualifier Vulnerable Occurrence Migration Concentration Area Migration Migration	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D D J F M A M J J A S O N D M D J F M A M J J A S O N D M D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D D M S O N D D D M S O N D D D D D D D D D D D D D D D D D D	- - - - - Spaw - Mating -		Sep-Sep	Sep-Sep Sep-Sep Sep-Sep Molting	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
33 36 NVEF RAR# 2 MARII RAR# 3 4 5 11 12	Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod RTEBRATE: Species Snow crab NE MAMMAL: Species Beluga whale Beluga whale Gray whale Bowhead whale	S F	Concentration  Concentration  Concentration  Feeding Migratory Route Reproductive/Feeding Migratory Route	General Distribution  Mapping Qualifier General Distribution  Mapping Qualifier Vulnerable Occurrence Migration Concentration Area Migration	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D Monthly Presence (Jan-Dec)  A M J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A	- - - - - - Spaw - - - Mating - - - -	- - - - - - - Calving - - - -	Sep-Sep	Sep-Sep Sep-Sep Sep-Sep Molting	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
33 36 NVEF RAR# 2 VARII RAR# 3 4 5 11 12 13	Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod RTEBRATE: Species Snow crab NE MAMMAL: Species Beluga whale Beluga whale Gray whale Bowhead whale Bowhead whale	S F E E	Concentration - Concentration Feeding Migratory Route Reproductive/Feeding Migratory Route Migratory Route Migratory Route	General Distribution  Mapping Qualifier General Distribution  Mapping Qualifier Vulnerable Occurrence Migration Concentration Area Migration Migration	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D D J F M A M J J A S O N D M D J F M A M J J A S O N D M D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D M S O N D D D M S O N D D D M S O N D D D D D D D D D D D D D D D D D D	- - - - - Spaw - Mating -	- - - - - - - - - - -	Sep-Sep	Sep-Sep Sep-Sep Sep-Sep Molting	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
33 36 NVEF RAR# 2 WARII RAR# 3 4 5 11 12 13 16	Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod RTEBRATE: Species Snow crab NE MAMMAL: Species Beluga whale Beluga whale Gray whale Bowhead whale Bowhead whale Bowhead whale	S F E E	Concentration - Concentration Feeding Migratory Route Reproductive/Feeding Migratory Route Migratory Route Migratory Route	General Distribution  Mapping Qualifier General Distribution  Mapping Qualifier Vulnerable Occurrence Migration Concentration Area Migration Vulnerable Occurrence	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D J F M A M J J A S O N D D Monthly Presence (Jan-Dec)  A M J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A	- - - - - - Spaw - - - Mating - - - -		Sep-Sep	Sep-Sep Sep-Sep Sep-Sep Molting	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec



#### Biology Map 10 Arctic Alaska Offshore ESI

Chukchi and Beaufort Seas



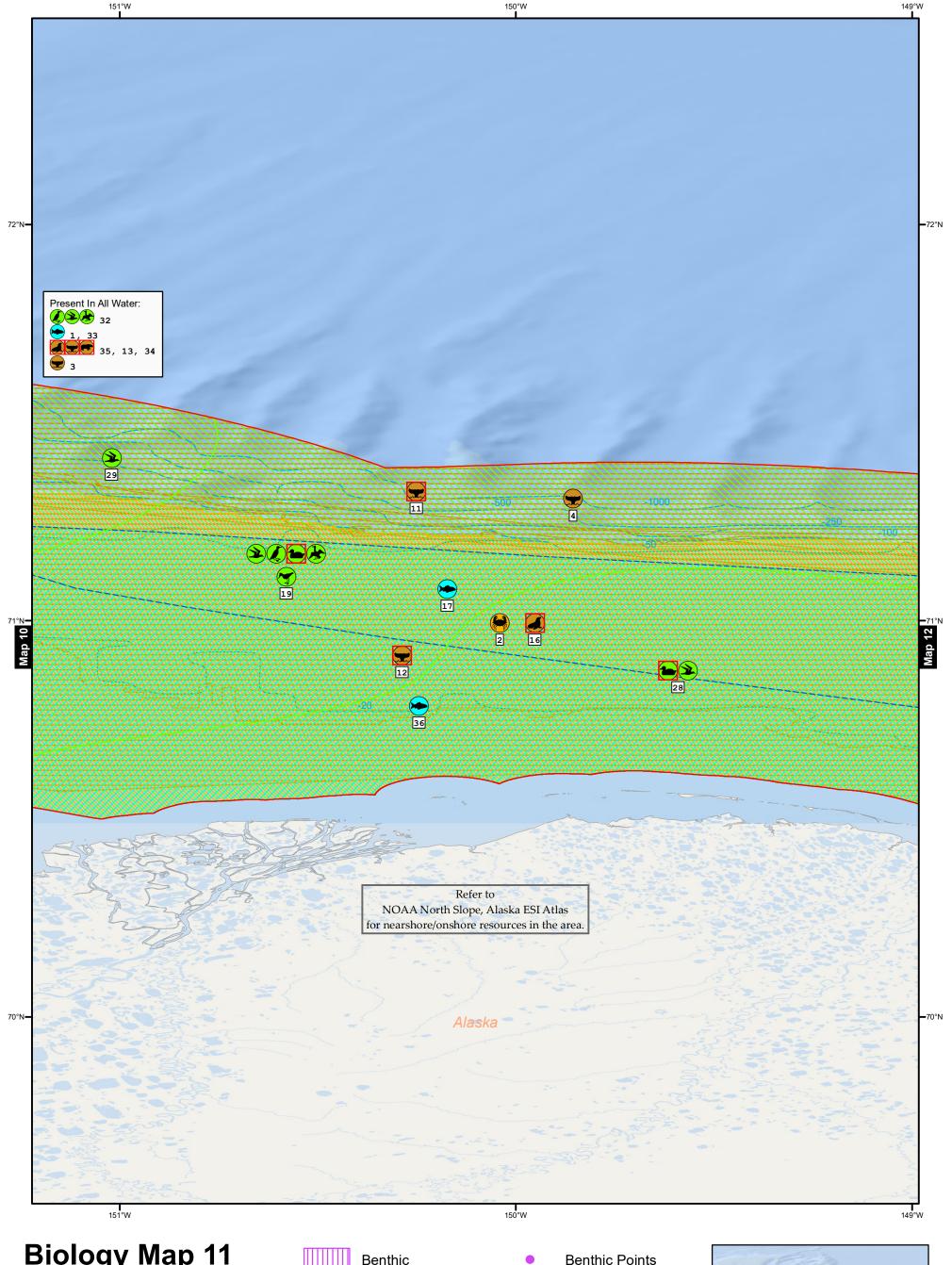


#### SEE MAP DATA TABLE



#### Arctic Alaska Offshore ESI: Biology Map 10 BIOLOGICAL RESOURCES:

BIRD											
RAR#	Species	S F	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Nesting	Miar	ating	Molting		
	. •			., .		resuring	iviigi	attrig	Wolling		-
19	Arctic tern		1008	General Distribution	MJJASO	-	-	-	-		
	Black-legged kittiwake		10,000S	General Distribution	MJJASON	-			· ·		
	Common eider		10S	General Distribution	AMJJASON	-	Apr-Jun	Oct-Nov	Jun-Jul		
	Common murre		1,000S	General Distribution	JJASO	-	-	-	Sep-Oct		
	Glaucous-winged gull		100S	General Distribution	MJJASO	-	-	-	-		
	Glaucous gull		1,000S	General Distribution	AMJJASON	-	-	-	-		
	King eider		100S	General Distribution	AMJJASON	-	Apr-Jul	Oct-Nov	Jun-Sep		
	Long-tailed duck		100S	General Distribution	JJAS	_		_	Jun-Sep		
	Pacific Ioon		100S	General Distribution	MJJASO	_	Jun-Sep	-	-		
			100S	General Distribution	M J J A S O	-	Juli-Sep	-	-		
	Parasitic jaeger					-	-	-			
	Pomarine jaeger		100S	General Distribution	MJJASO	-	-	-	-		
	Red-necked phalarope		100S	General Distribution	MJJASO	-	-	-	-		
	Red phalarope		100S	General Distribution	MJJASON	-	May-Nov	-	Aug-Sep		
	Sabine's gull		100S	General Distribution	MJJASO	-	-	-	-		
	Spectacled eider	Т	100S	General Distribution	MJJASON	-	May-Jun	Oct-Nov	Jun-Sep		
	Steller's eider	Т	10S	General Distribution	MJJASO	-	May-Oct	-	Jun-Oct		
	Thick-billed murre	•	1,000\$	General Distribution	MJJASON	-	Jul-Sep	-	Aug-Nov		
			108			-	•	-	Aug-Nov		
	White-winged scoter			General Distribution	MJJASO		-	-	-		
27	Arctic tern		Up To 42,123 Birds	Concentration Area	M J J A S O	Jul-Aug	-	-	-		
	Black-legged kittiwake		Up To 124,877 Birds	Concentration Area	MJJASON	May-Aug	-	-	-		
	King eider		Up To 102,000 Birds	Concentration Area	AMJJASON	Jun-Sep	Apr-Jul	Oct-Nov	Jun-Sep		
	Long-tailed duck		Up To 227,259 Birds	Concentration Area	AMJJASON	May-Aug	Apr-May	Oct-Nov	Jun-Aug		
	Red phalarope		Up To 41,445 Birds	Concentration Area	MJJASON	Jun-Aug	May-Nov	-	Aug-Sep		
28	Black scoter		Up To 100 Birds	Concentration Area	JJASO	-		_	Jul-Sep		
20			•				Λρ. Ι	Oct No.			
	Common eider		Up To 4,500 Birds	Concentration Area	AMJJASON	Jun-Oct	Apr-Jun	Oct-Nov	Jun-Jul		
	Glaucous gull		Up To 29,696 Birds	Concentration Area	AMJJASON	Jul-Aug	-	-	-		
	King eider		Up To 2,500 Birds	Concentration Area	AMJJASON	-	Apr-Jul	Oct-Nov	Jun-Sep		
	Long-tailed duck		Up To 70,000 Birds	Concentration Area	AMJJASON	May-Aug	Apr-May	Oct-Nov	Jun-Aug		
	Spectacled eider	Т	100S	Concentration Area	MJJASON	May-Aug	May-Jun	Oct-Nov	Jun-Sep		
	Steller's eider	T	108	Concentration Area	J J A S O	Jun-Aug	Jun-Oct	-	Jun-Oct		
						ū					
	Surf scoter		Up To 4,000 Birds	Concentration Area	MJJASON	-	-	-	Jul-Aug		
	White-winged scoter		100S	Concentration Area	MJJASO	-	-	-	-		
29	Glaucous gull		Up To 21,671 Birds	Concentration Area	AMJJASON	Jul-Aug	-	-	-		
32	Ancient murrelet		100S	General Distribution	JASO	-	-	-	-		
	Black guillemot		100S	General Distribution	AMJJASON	-	-	-	_		
	Crested auklet		1,000S	General Distribution	J J A S O	-	Aug-Oct	-	Jun-Oct		
							•				
	Horned puffin		100S	General Distribution	JJASO	-	Jun-Jun	Sep-Oct	-		
	Ivory gull		10S	General Distribution	AMJJASON	-	Apr-May	Sep-Nov	-		
	Kittlitz's murrelet		100S	General Distribution	JJASON	-	-	-	-		
	Least auklet		1,000S	General Distribution	MAMJJASON	-	Mar-Nov	-	Jun-Oct		
	Long-tailed jaeger		100S	General Distribution	MJJASO	-	-	-	-		
	Loons		100S	General Distribution	AMJJASON			_			
	Northern fulmar		1,000\$	General Distribution	JJASON		-				
						-					
	Parakeet auklet		100S	General Distribution	MAMJJASON	-	Mar-May	Aug-Nov	Jun-Nov		
	Ross's gull		100S	General Distribution	JSON	-	Jun-Jun	Sep-Nov	-		
	Short-tailed shearwater		1,000S	General Distribution	AMJJASO	-	Apr-May	Sep-Oct	May-Sep		
	Tufted puffin		100S	General Distribution	FMAM SOND	-	Feb-May	Sep-Dec	-		
	<u> </u>							•			
ISH:											
	Species	S F	Concentration	Manning Qualifier	Monthly Presence (Jan-Dec)	Snou	ning.	Eago	Longo	Juveniles	V drug
	• •	<u> </u>	Concentration	Mapping Qualifier	· · · · · · · · · · · · · · · · · · ·	Spaw	ming	Eggs	Larvae		Adul
1	Arctic cod		-	General Distribution	J F M A M J J A S O N D	Dec-Mar	-	Aug-Sep	Aug-Sep	Jan-Dec	Jan-D
	Bering flounder		-	General Distribution	J F M A M J J A S O N D	-	-	Aug-Aug	Aug-Aug	Jan-Dec	Jan-D
	Greenland halibut (turbot)		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	Jan-Dec	Jan-D
	Pacific cod		-	General Distribution	J F M A M J J A S O N D	-	-	_	-	= 00	
				General Distribution	J F M A M J J A S O N D			_		Ion Doo	lo= D
	Pacific sand lance		-			-	-	-	Aug-Sep	Jan-Dec	Jan-D
	Walleye pollock		-	General Distribution	J F M A M J J A S O N D	-	-	Sep-Sep	Sep-Sep	Jan-Dec	Jan-D
17	Capelin		-	General Distribution	J F M A M J J A S O N D	-	-	-	Sep-Sep	Jan-Dec	Jan-D
	Yellowfin sole		-	General Distribution	J F M A M J J A S O N D	-	-	-	Sep-Sep	Jan-Dec	Jan-D
33	Pacific herring		-	General Distribution	J F M A M J J A S O N D	-	-	-		Jan-Dec	Jan-D
	Chum salmon			General Distribution	J F M A M J J A S O N D	_	-	_	_	Jan-Dec	Jan-D
00				General Distribution							
	Pink salmon		-		J F M A M J J A S O N D	-	-	-	-	Jul-Dec	Jan-D
	Saffron cod		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	Jan-Dec	Jan-D
\/ <b> </b>	RTEBRATE:										
			• : ::			_		_			
	Species	S F	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Spaw	/ning	Eggs	Larvae	Juveniles	Adul
2	Snow crab		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	-	-
ARI	NE MAMMAL:										
	Species	S F	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Mating	Calving	Pupping	Molting		
		э г		., .		iviatility	Gaiving	r upping	iviolifig		
_	Beluga whale		Feeding	Vulnerable Occurrence	JASO	-	-	-	-		
3	Beluga whale		Migratory Route	Migration	A M N	-	-	-	-		
		Е	Migratory Route	Migration	AM	-	-	_			
4	Bowhead whale	_									
4 11	Bowhead whale	F	Migratory Route	Migration							
4 11 12	Bowhead whale	E	Migratory Route	Migration	ASO	-	-	-	-		
4 11 12 13	Bowhead whale Bowhead whale	E	Migratory Route Reproductive/Feeding	Vulnerable Occurrence	JASO	-	-	-	-		
4 11 12 13 16	Bowhead whale Bowhead whale Bearded seal	E T	• ,	Vulnerable Occurrence General Distribution	J F M A M J J A S O N D	- - Apr-May		- - Mar-May			
4 11 12 13 16	Bowhead whale Bowhead whale	E	• ,	Vulnerable Occurrence	JASO	- - Apr-May -	-	- - Mar-May -	-		





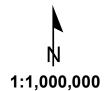
Chukchi and Beaufort Seas





#### SEE MAP DATA TABLE

for Status, Seasonality, and Breed information about mapped species. Published: December 2023

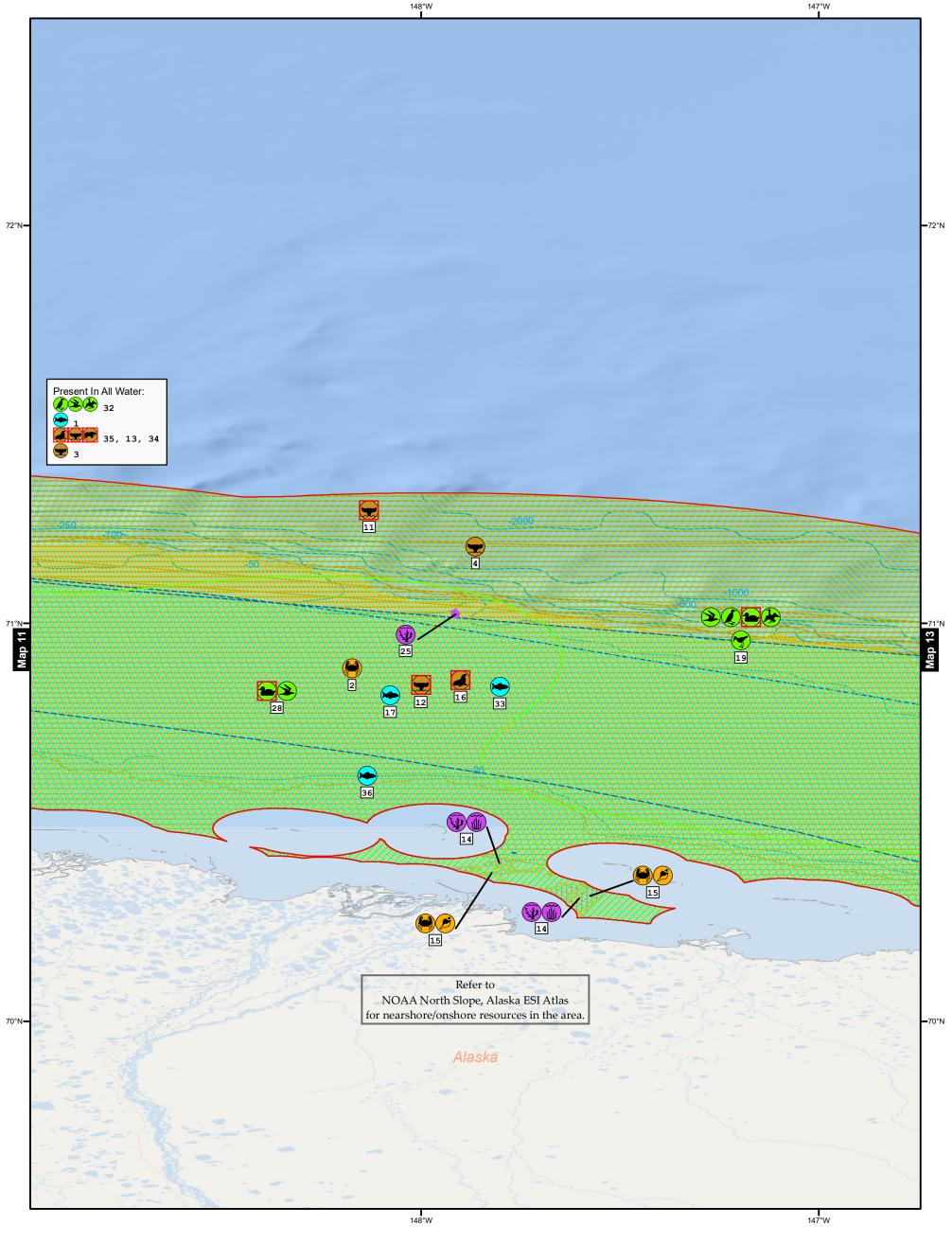


10 11 12 13 14 15

Alaska

# Arctic Alaska Offshore ESI: Biology Map 11 BIOLOGICAL RESOURCES:

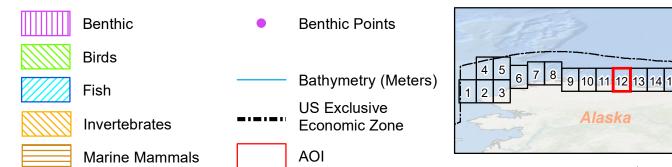
RAR#	):										
I W II III	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Nesting	Migr	ating	Molting		
19	Arctic tern		100S	General Distribution	MJJASO	-	-	-	-		
	Black-legged kittiwake		10,000S	General Distribution	MJJASON	-	-	-	-		
	Common eider		10S	General Distribution	AMJJASON	-	Apr-Jun	Oct-Nov	Jun-Jul		
	Common murre		1,000S	General Distribution	JJASO	-	-	-	Sep-Oct		
	Glaucous-winged gull		100S	General Distribution	MJJASO	-	-	-	-		
	Glaucous gull		1,000S	General Distribution	AMJJASON	-	-	-	-		
	King eider		100S	General Distribution	AMJJASON	-	Apr-Jul	Oct-Nov	Jun-Sep		
	Long-tailed duck		100S	General Distribution	JJAS	-		-	Jun-Sep		
	Pacific Ioon		100S	General Distribution	MJJASO	-	Jun-Sep	-	- '		
	Parasitic jaeger		100S	General Distribution	MJJASO	-	-	-	-		
	Pomarine jaeger		100S	General Distribution	MJJASO	-	-	-	-		
	Red-necked phalarope		100S	General Distribution	MJJASO	-	-	-	-		
	Red phalarope		100S	General Distribution	MJJASON	_	May-Nov	-	Aug-Sep		
	Sabine's gull		1008	General Distribution	M J J A S O	-	-	-	g		
	Spectacled eider	Т	100S	General Distribution	MJJASON	_	May-Jun	Oct-Nov	Jun-Sep		
	Steller's eider	T	108	General Distribution	MJJASO	-	May-Oct	-	Jun-Oct		
	Thick-billed murre	•	1,000\$	General Distribution	MJJASON	-	Jul-Sep	-	Aug-Nov		
			1,000S	General Distribution	M J J A S O	-	•		Aug-Nov		
20	White-winged scoter						-	-	- Iul Can		
28	Black scoter		Up To 100 Birds	Concentration Area	JJASO	- lun Oot	- Apr lup	Oct Nov	Jul-Sep		
	Common eider		Up To 4,500 Birds	Concentration Area	AMJJASON	Jun-Oct	Apr-Jun	Oct-Nov	Jun-Jul		
	Glaucous gull		Up To 29,696 Birds	Concentration Area	AMJJASON	Jul-Aug	- ^	- O-4 N	-		
	King eider		Up To 2,500 Birds	Concentration Area	AMJJASON	-	Apr-Jul	Oct-Nov	Jun-Sep		
	Long-tailed duck		Up To 70,000 Birds	Concentration Area	AMJJASON	May-Aug	Apr-May	Oct-Nov	Jun-Aug		
	Spectacled eider	T	100S	Concentration Area	MJJASON	May-Aug	May-Jun	Oct-Nov	Jun-Sep		
	Steller's eider	T	10S	Concentration Area	JJASO	Jun-Aug	Jun-Oct	-	Jun-Oct		
	Surf scoter		Up To 4,000 Birds	Concentration Area	MJJASON	-	-	-	Jul-Aug		
	White-winged scoter		100S	Concentration Area	MJJASO	-	-	-	-		
29	Glaucous gull		Up To 21,671 Birds	Concentration Area	AMJJASON	Jul-Aug	-	-	-		
32	Ancient murrelet		100S	General Distribution	JASO	-	-	-	-		
	Black guillemot		100S	General Distribution	AMJJASON	-	-	-	-		
	Crested auklet		1,000S	General Distribution	JJASO	-	Aug-Oct	-	Jun-Oct		
	Horned puffin		100S	General Distribution	JJASO	-	Jun-Jun	Sep-Oct	-		
	Ivory gull		10S	General Distribution	AMJJASON	-	Apr-May	Sep-Nov	_		
	Kittlitz's murrelet		100S	General Distribution	JJASON	_	-	-	_		
	Least auklet		1,000S	General Distribution	MAMJJASON	_	Mar-Nov	-	Jun-Oct		
	Long-tailed jaeger		1008	General Distribution	MJJASO		-	_	0011-001		
	Long-tailed jaeger		1005	General Distribution	AMJJASON	-	-	-	-		
							-				
	Northern fulmar		1,000S	General Distribution	JJASON	-		- A N			
	Parakeet auklet		100S	General Distribution	MAMJJASON	-	Mar-May	Aug-Nov	Jun-Nov		
	Ross's gull		1008	General Distribution	J SON	-	Jun-Jun	Sep-Nov	-		
	Short-tailed shearwater		1,000S	General Distribution	AMJJASO	-	Apr-May	Sep-Oct	May-Sep		
	Tufted puffin		100S	General Distribution	F M A M S O N D	-	Feb-May	Sep-Dec	-		
FISH	:										
	Species	0.5	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Spaw	mina	Eggs			Adults
NAN#	• •		Concentration			Spaw	ming		Lantas	luvoniloo	
		SF		11 9					Larvae	Juveniles	
1	Arctic cod	5 F	-	General Distribution	J F M A M J J A S O N D	Dec-Mar	-	Aug-Sep	Aug-Sep	Jan-Dec	Jan-Dec
1	Arctic cod Bering flounder	5 F	-	11 9	J F M A M J J A S O N D J F M A M J J A S O N D		-			•	Jan-Dec
1		5 F	-	General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D			Aug-Sep	Aug-Sep	Jan-Dec	Jan-Dec Jan-Dec
1	Bering flounder	5 F	- - -	General Distribution General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D		-	Aug-Sep	Aug-Sep Aug-Aug	Jan-Dec Jan-Dec	Jan-Dec Jan-Dec
1	Bering flounder Greenland halibut (turbot) Pacific cod Pacific sand lance	5 F	- - - -	General Distribution General Distribution General Distribution General Distribution General Distribution General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	Dec-Mar - -	-	Aug-Sep Aug-Aug - - -	Aug-Sep Aug-Aug Aug-Sep	Jan-Dec Jan-Dec Jan-Dec - Jan-Dec	Jan-Dec Jan-Dec Jan-Dec - Jan-Dec
1	Bering flounder Greenland halibut (turbot) Pacific cod	5 F	- - -	General Distribution General Distribution General Distribution General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	Dec-Mar - -	- - -	Aug-Sep Aug-Aug -	Aug-Sep Aug-Aug -	Jan-Dec Jan-Dec Jan-Dec -	Jan-Dec Jan-Dec Jan-Dec - Jan-Dec
	Bering flounder Greenland halibut (turbot) Pacific cod Pacific sand lance	5 F	- - -	General Distribution General Distribution General Distribution General Distribution General Distribution General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	Dec-Mar - -	- - -	Aug-Sep Aug-Aug - - -	Aug-Sep Aug-Aug Aug-Sep	Jan-Dec Jan-Dec Jan-Dec - Jan-Dec	Jan-Dec Jan-Dec Jan-Dec
	Bering flounder Greenland halibut (turbot) Pacific cod Pacific sand lance Walleye pollock	5 F	- - -	General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	Dec-Mar - -	- - - -	Aug-Sep Aug-Aug - - -	Aug-Sep Aug-Aug Aug-Sep Sep-Sep	Jan-Dec Jan-Dec Jan-Dec - Jan-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec - Jan-Dec Jan-Dec
17	Bering flounder Greenland halibut (turbot) Pacific cod Pacific sand lance Walleye pollock Capelin	5 F	- - -	General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	Dec-Mar - -	- - - -	Aug-Sep Aug-Aug - - -	Aug-Sep Aug-Aug Aug-Sep Sep-Sep Sep-Sep	Jan-Dec Jan-Dec Jan-Dec - Jan-Dec Jan-Dec Jan-Dec	Jan-Dec Jan-Dec Jan-Dec - Jan-Dec Jan-Dec Jan-Dec
17	Bering flounder Greenland halibut (turbot) Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole	5 F	- - -	General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	Dec-Mar - -		Aug-Sep Aug-Aug - - -	Aug-Sep Aug-Aug Aug-Sep Sep-Sep Sep-Sep	Jan-Dec Jan-Dec Jan-Dec - Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec	Jan-Dec Jan-Dec - Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
17	Bering flounder Greenland halibut (turbot) Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole	5 F	- - -	General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	Dec-Mar - -	-	Aug-Sep Aug-Aug - - -	Aug-Sep Aug-Aug - Aug-Sep Sep-Sep Sep-Sep Sep-Sep	Jan-Dec Jan-Dec - Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec	Jan-Dec Jan-Dec - Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
17	Bering flounder Greenland halibut (turbot) Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon	5 F	- - - - - - -	General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	Dec-Mar		Aug-Sep Aug-Aug Sep-Sep	Aug-Sep Aug-Aug Aug-Sep Sep-Sep Sep-Sep Sep-Sep	Jan-Dec Jan-Dec - Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec	Jan-Dec
17 33 36	Bering flounder Greenland halibut (turbot) Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod	5 F	- - - - - - -	General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	Dec-Mar		Aug-Sep Aug-Aug Sep-Sep	Aug-Sep Aug-Aug Aug-Sep Sep-Sep Sep-Sep Sep-Sep	Jan-Dec Jan-Dec - Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec	Jan-Dec
17 33 36	Bering flounder Greenland halibut (turbot) Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod		- - - - - - - - - - -	General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	Dec-Mar		Aug-Sep Aug-Aug Sep-Sep	Aug-Sep Aug-Aug Aug-Sep Sep-Sep Sep-Sep Sep-Sep	Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
17 33 36	Bering flounder Greenland halibut (turbot) Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod	S F	- - - - - - -	General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	Dec-Mar		Aug-Sep Aug-Aug Sep-Sep	Aug-Sep Aug-Aug Aug-Sep Sep-Sep Sep-Sep Sep-Sep	Jan-Dec Jan-Dec - Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jul-Dec	Jan-Dec
17 33 36 <b>NVE</b> RAR#	Bering flounder Greenland halibut (turbot) Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod		- - - - - - - - - - -	General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	Dec-Mar		Aug-Sep Aug-Aug Sep-Sep	Aug-Sep Aug-Aug	Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
17 33 36 <b>NVE</b> RAR# 2	Bering flounder Greenland halibut (turbot) Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab		- - - - - - - - - - -	General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D	Dec-Mar		Aug-Sep Aug-Aug Sep-Sep	Aug-Sep Aug-Aug	Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
17 33 36 INVE RAR# 2 MAR	Bering flounder Greenland halibut (turbot) Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab	S F	- - - - - - - - - - - - - - -	General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D Monthly Presence (Jan-Dec) J F M A M J J A S O N D	Dec-Mar	- - - - - - - - - vning	Aug-Sep Aug-Aug Sep-Sep Eggs	Aug-Sep Aug-Aug	Jan-Dec	Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec Jan-Dec
17 33 36 INVE RAR# 2 MAR RAR#	Bering flounder Greenland halibut (turbot) Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab  INE MAMMAL: Species		Concentration	General Distribution Mapping Qualifier General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D Monthly Presence (Jan-Dec) Monthly Presence (Jan-Dec)	Dec-Mar	- - - - - - - - - - /ning -	Aug-Sep Aug-Aug Sep-Sep	Aug-Sep Aug-Aug	Jan-Dec	Jan-Dec
17 33 36 INVE RAR# 2 MAR RAR# 3	Bering flounder Greenland halibut (turbot) Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab  INE MAMMAL: Species Beluga whale	S F	Concentration - Concentration - Concentration - Feeding	General Distribution Mapping Qualifier General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D Monthly Presence (Jan-Dec) J F M A M J J A S O N D	Dec-Mar	- - - - - - - - - vning	Aug-Sep Aug-Aug Sep-Sep Eggs	Aug-Sep Aug-Aug	Jan-Dec	Jan-Dec
17 33 36 INVE RAR# 2 MAR RAR# 3 4	Bering flounder Greenland halibut (turbot) Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab  INE MAMMAL: Species Beluga whale Beluga whale	S F		General Distribution Mapping Qualifier General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D Monthly Presence (Jan-Dec) J F M A M J J A S O N D	Dec-Mar	- - - - - - - - - - /ning -	Aug-Sep Aug-Aug Sep-Sep Eggs	Aug-Sep Aug-Aug	Jan-Dec	Jan-Dec
17 33 36 INVE RAR# 2 MAR RAR# 3 4 11	Bering flounder Greenland halibut (turbot) Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab  INE MAMMAL: Species Beluga whale Beluga whale Bowhead whale	S F S F		General Distribution Mapping Qualifier General Distribution  Mapping Qualifier Vulnerable Occurrence Migration Migration	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D Monthly Presence (Jan-Dec) J F M A M J J A S O N D  Monthly Presence (Jan-Dec) J F M A M J J A S O N D	Dec-Mar	Calving	Aug-Sep Aug-Aug Sep-Sep Eggs	Aug-Sep Aug-Aug	Jan-Dec	Jan-Dec
17 33 36 INVE RAR# 2 MAR RAR# 3 4 11 12	Bering flounder Greenland halibut (turbot) Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab  INE MAMMAL: Species Beluga whale Beluga whale Bowhead whale	S F S F	Concentration  Concentration  Concentration  Feeding  Migratory Route  Migratory Route  Migratory Route	General Distribution Mapping Qualifier General Distribution  Mapping Qualifier Vulnerable Occurrence Migration Migration Migration	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D Monthly Presence (Jan-Dec) J F M A M J J A S O N D  Monthly Presence (Jan-Dec) J F M A M J J A S O N D	Dec-Mar	- - - - - - - - - - /ning -	Aug-Sep Aug-Aug Sep-Sep Eggs	Aug-Sep Aug-Aug	Jan-Dec	Jan-Dec
17 33 36 INVE RAR# 2 MAR RAR# 3 4 11 12	Bering flounder Greenland halibut (turbot) Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab  INE MAMMAL: Species Beluga whale Beluga whale Bowhead whale	S F  S F  E E E		General Distribution Mapping Qualifier General Distribution  Mapping Qualifier Vulnerable Occurrence Migration Migration	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D Monthly Presence (Jan-Dec) J F M A M J J A S O N D  Monthly Presence (Jan-Dec) J F M A M J J A S O N D  Monthly Presence (Jan-Dec) J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A	Dec-Mar	Calving	Aug-Sep Aug-Aug Sep-Sep Eggs	Aug-Sep Aug-Aug	Jan-Dec	Jan-Dec
17 33 36 INVE RAR# 2 MAR RAR# 3 4 11 12 13	Bering flounder Greenland halibut (turbot) Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab  INE MAMMAL: Species Beluga whale Beluga whale Bowhead whale	S F S F	Concentration  Concentration  Concentration  Feeding  Migratory Route  Migratory Route  Migratory Route	General Distribution Mapping Qualifier General Distribution  Mapping Qualifier Vulnerable Occurrence Migration Migration Migration	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D  Monthly Presence (Jan-Dec)  Monthly Presence (Jan-Dec)  Monthly Presence (Jan-Dec)  Monthly Presence (Jan-Dec) J F M A M J J A S O N D	Dec-Mar	Calving	Aug-Sep Aug-Aug Sep-Sep	Aug-Sep Aug-Aug	Jan-Dec	Jan-Dec
17 33 36 INVE RAR# 2 MAR RAR# 3 4 11 12 13 16	Bering flounder Greenland halibut (turbot) Pacific cod Pacific sand lance Walleye pollock Capelin Yellowfin sole Pacific herring Chum salmon Pink salmon Saffron cod  RTEBRATE: Species Snow crab  INE MAMMAL: Species Beluga whale Beluga whale Bowhead whale Bowhead whale Bowhead whale	S F  S F  E E E	Concentration  Concentration  Concentration  Feeding  Migratory Route  Migratory Route  Migratory Route	General Distribution Mapping Qualifier General Distribution  Mapping Qualifier Vulnerable Occurrence Migration Migration Vulnerable Occurrence	J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D Monthly Presence (Jan-Dec) J F M A M J J A S O N D  Monthly Presence (Jan-Dec) J F M A M J J A S O N D  Monthly Presence (Jan-Dec) J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A S O J A	Dec-Mar	Calving	Aug-Sep Aug-Aug Sep-Sep	Aug-Sep Aug-Aug	Jan-Dec	Jan-Dec



#### Biology Map 12 Arctic Alaska Offshore ESI

Chukchi and Beaufort Seas

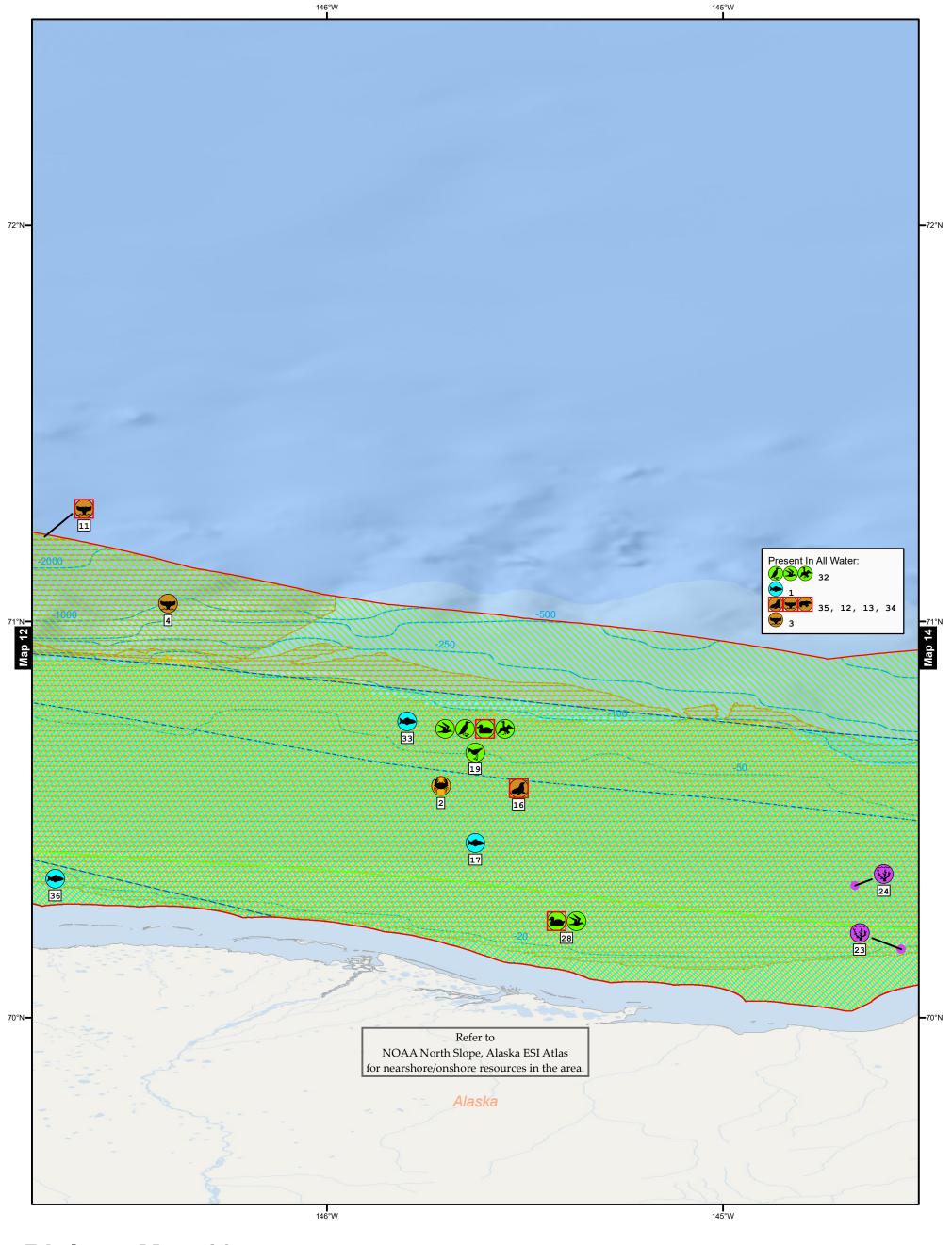




#### SEE MAP DATA TABLE

# Arctic Alaska Offshore ESI: Biology Map 12 BIOLOGICAL RESOURCES:

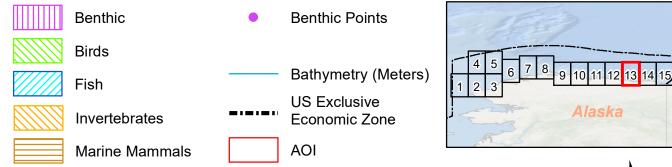
	OGICAL RESOURCES	<b>5</b> :									
BENT	HIC:										
RAR#	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)						
	Corals		_	Concentration Area	J F M A M J J A S O N D			,			
	Kelp		-	Concentration Area	J F M A M J J A S O N D						
	Red algae		-	Concentration Area	J F M A M J J A S O N D						
	Sponges		-	Concentration Area	J F M A M J J A S O N D						
	Deep sea sponge		Structure-Forming	Vulnerable Occurrence	J F M A M J J A S O N D						
	· · · ·										
BIRD:											
RAR#	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Nesting	Migr	rating	Molting		
19	Arctic tern		100S	General Distribution	MJJASO	-	_	-	-		
	Black-legged kittiwake		10,000S	General Distribution	MJJASON	-	-	-	-		
	Common eider		10S	General Distribution	AMJJASON	-	Apr-Jun	Oct-Nov	Jun-Jul		
	Common murre		1,000S	General Distribution	JJASO	-	-	-	Sep-Oct		
	Glaucous-winged gull		100S	General Distribution	MJJASO	-	-	-	-		
	Glaucous gull		1,000S	General Distribution	AMJJASON	-	-	-	-		
	King eider		100S	General Distribution	AMJJASON	-	Apr-Jul	Oct-Nov	Jun-Sep		
	Long-tailed duck		100S	General Distribution	JJAS	-	-	-	Jun-Sep		
	Pacific Ioon		100S	General Distribution	MJJASO	-	Jun-Sep	-	-		
	Parasitic jaeger		100S	General Distribution	MJJASO	-	-	-	-		
	Pomarine jaeger		100S	General Distribution	MJJASO	-	-	-	-		
	Red-necked phalarope		100S	General Distribution	MJJASO	-	-	-	-		
	Red phalarope		1008	General Distribution	MJJASON	-	May-Nov	-	Aug-Sep		
	Sabine's gull		100S 100S	General Distribution	MJJASO	-	Most live	Oot No.	- Jun-Sep		
	Spectacled eider Steller's eider	T T	100S 10S	General Distribution General Distribution	M J J A S O N M J J A S O	-	May-Jun May-Oct	Oct-Nov -	Jun-Sep Jun-Oct		
	Thick-billed murre		1,000S	General Distribution	MJJASON	-	Jul-Sep	-	Aug-Nov		
	White-winged scoter		1,000S 10S	General Distribution	MJJASON	-	Jui-Sep -	-	, tug-110V		
28	Black scoter		Up To 100 Birds	Concentration Area	JJASO	-	-	-	Jul-Sep		
	Common eider		Up To 4,500 Birds	Concentration Area	AMJJASON	Jun-Oct	Apr-Jun	Oct-Nov	Jun-Jul		
	Glaucous gull		Up To 29,696 Birds	Concentration Area	AMJJASON	Jul-Aug		-	-		
	King eider		Up To 2,500 Birds	Concentration Area	AMJJASON	-	Apr-Jul	Oct-Nov	Jun-Sep		
	Long-tailed duck		Up To 70,000 Birds	Concentration Area	AMJJASON	May-Aug	Apr-May	Oct-Nov	Jun-Aug		
	Spectacled eider	Т	100S	Concentration Area	MJJASON	May-Aug	May-Jun	Oct-Nov	Jun-Sep		
	Steller's eider	T	10S	Concentration Area	JJASO	Jun-Aug	Jun-Oct	-	Jun-Oct		
	Surf scoter		Up To 4,000 Birds	Concentration Area	MJJASON	-	-	-	Jul-Aug		
	White-winged scoter		100S	Concentration Area	MJJASO	-	-	-	-		
32	Ancient murrelet		100S	General Distribution	J A S O	-	-	-	-		
	Black guillemot		100S	General Distribution	AMJJASON	-	-	-	-		
	Crested auklet		1,000S	General Distribution	J J A S O	-	Aug-Oct	-	Jun-Oct		
	Horned puffin		100S	General Distribution	JJASO	-	Jun-Jun	Sep-Oct	-		
	Ivory gull		10S	General Distribution	AMJJASON	-	Apr-May	Sep-Nov	-		
	Kittlitz's murrelet Least auklet		100S 1,000S	General Distribution General Distribution	J J A S O N  M A M J J A S O N	-	- Mar-Nov	-	- Jun-Oct		
	Long-tailed jaeger		1008	General Distribution	MJJASO	-	IVIAI-INOV	-	Juli-Oct		
	Loons		1005	General Distribution	AMJJASON	-		-	-		
	Northern fulmar		1,000S	General Distribution	JJASON	-	_	-	-		
	Parakeet auklet		100S	General Distribution	MAMJJASON	-	Mar-May	Aug-Nov	Jun-Nov		
	Ross's gull		100S	General Distribution	J SON	-	Jun-Jun	Sep-Nov	-		
	Short-tailed shearwater		1,000S	General Distribution	AMJJASO	-	Apr-May	Sep-Oct	May-Sep		
	Tufted puffin		100S	General Distribution	FMAM SOND	-	Feb-May	Sep-Dec	-		
	·							·			
FISH:											
RAR#	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Spaw	vning	Eggs	Larvae	Juveniles	Adults
	Arctic cod		_	General Distribution	J F M A M J J A S O N D	Dec-Mar		Aug-Sep	Aug-Sep	Jan-Dec	Jan-De
•	Bering flounder		-	General Distribution	J F M A M J J A S O N D	-	-	Aug-Aug	Aug-Aug	Jan-Dec	Jan-De
	Greenland halibut (turbot)		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	Jan-Dec	Jan-De
	Pacific cod		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	-	-
	Pacific sand lance		-	General Distribution	J F M A M J J A S O N D	-	-	-	Aug-Sep	Jan-Dec	Jan-De
	Walleye pollock		-	General Distribution	J F M A M J J A S O N D	-	-	Sep-Sep	Sep-Sep	Jan-Dec	Jan-De
17	Capelin		-	General Distribution	J F M A M J J A S O N D	-	-	-	Sep-Sep	Jan-Dec	Jan-De
	Yellowfin sole		-	General Distribution	J F M A M J J A S O N D	-	-	-	Sep-Sep	Jan-Dec	Jan-De
	Pacific herring		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	Jan-Dec	Jan-De
36	Chum salmon		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	Jan-Dec	Jan-De
	Pink salmon		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	Jul-Dec	Jan-De
	Saffron cod		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	Jan-Dec	Jan-De
NVFF	RTEBRATE:										
		0 -	One control	Manata a O 100	Manthly Description (1)	_	under et	F	1	h 9	A .1 1:
-	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Spaw	vning	Eggs	Larvae	Juveniles	Adult
	Snow crab		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	-	-
15	Anemones		-	Concentration Area	J F M A M J J A S O N D	-	-	-	-	-	-
	Bryozoans		-	Concentration Area	J F M A M J J A S O N D	-	-	-	-	-	-
	Molluscs See aguirte		-	Concentration Area	J F M A M J J A S O N D	-	-	-	-	-	-
	Sea squirts		-	Concentration Area	J F M A M J J A S O N D	-	-	-	-	-	-
<b>MARII</b>	NE MAMMAL:										
	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Mating	Calving	Pupping	Molting		
	Beluga whale		Feeding	Vulnerable Occurrence	JASO	- Iviating	Jaiving	· ~pping	omiy		
	Beluga whale		Migratory Route	Migration	A M N	-	-	-	-		
	Bowhead whale	Е	Migratory Route  Migratory Route	Migration	AM						
	Bowhead whale	E	Migratory Route	Migration	ASO						
12		E	Reproductive/Feeding	Vulnerable Occurrence	JASO	_	_	-	_		
	Bowhead whale			00001101100							
13	Bowhead whale Bearded seal	T	_	General Distribution	J F M A M J J A S O N D	Apr-May	-	Mar-May	Apr-Jul		
13 16			:	General Distribution General Distribution	J F M A M J J A S O N D J F M A M J J O N D	Apr-May -	-	Mar-May -	Apr-Jul -		



#### Biology Map 13 Arctic Alaska Offshore ESI

Chukchi and Beaufort Seas

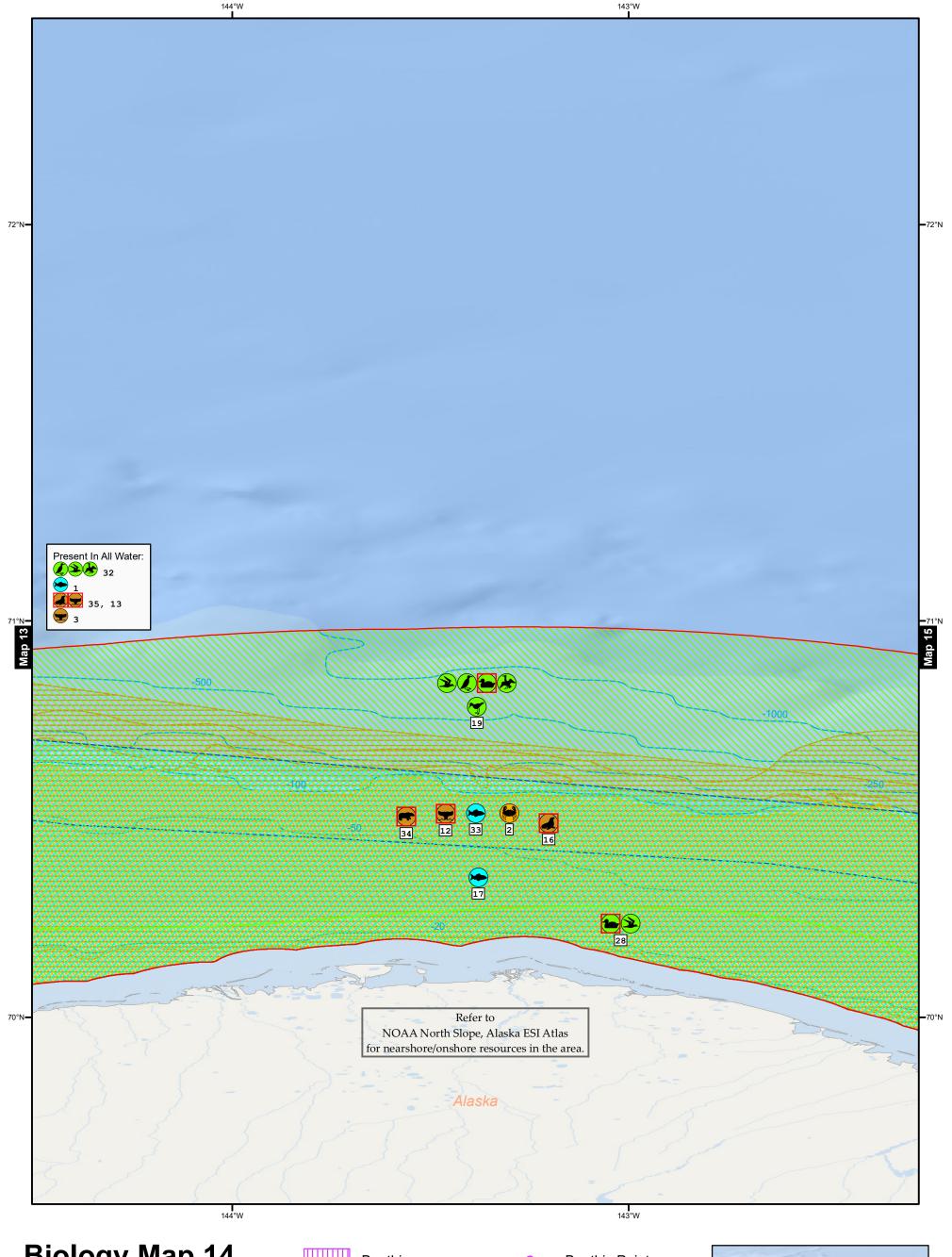




#### SEE MAP DATA TABLE

#### Arctic Alaska Offshore ESI: Biology Map 13 **BIOLOGICAL RESOURCES:**

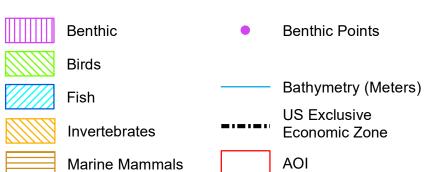
BENT	HIC:										
RAR#	Species	S F	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)						
	Soft coral Sea pens		Solitary Structure-Forming	Vulnerable Occurrence Vulnerable Occurrence	J F M A M J J A S O N D J F M A M J J A S O N D						
3IRD:											
	Species	S F	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Nesting	Migr	ating	Molting		
	- *	<u> </u>	-			rvesung	iviigi	auriy	woning		
19	Arctic tern		100S	General Distribution	MJJASO	-	-	-	-		
	Black-legged kittiwake		10,000\$	General Distribution	MJJASON	-		-	- 		
	Common eider		10S	General Distribution	AMJJASON	-	Apr-Jun	Oct-Nov	Jun-Jul		
	Common murre		1,000S	General Distribution	JJASO	-	-	-	Sep-Oct		
	Glaucous-winged gull		100S	General Distribution	MJJASO	-	-	-	-		
	Glaucous gull		1,000S	General Distribution	AMJJASON	-	-	-	-		
	King eider		100S	General Distribution	AMJJASON	-	Apr-Jul	Oct-Nov	Jun-Sep		
	Long-tailed duck		100S	General Distribution	JJAS	_		-	Jun-Sep		
	Pacific Ioon		100S	General Distribution	MJJASO	_	Jun-Sep	-	-		
	Parasitic jaeger		100S	General Distribution	MJJASO		зип-оер				
	, ,		100S		M J J A S O	-	-	-	-		
	Pomarine jaeger			General Distribution		-	-	-	-		
	Red-necked phalarope		100S	General Distribution	MJJASO	-		-			
	Red phalarope		100S	General Distribution	MJJASON	-	May-Nov	-	Aug-Sep		
	Sabine's gull		100S	General Distribution	MJJASO	-	-	-	-		
	Spectacled eider	Т	100S	General Distribution	MJJASON	-	May-Jun	Oct-Nov	Jun-Sep		
	Steller's eider	Т	10S	General Distribution	MJJASO	-	May-Oct	-	Jun-Oct		
	Thick-billed murre		1,000S	General Distribution	MJJASON	-	Jul-Sep	-	Aug-Nov		
	White-winged scoter		10S	General Distribution	MJJASO	-	-	-	-		
28	Black scoter		Up To 100 Birds	Concentration Area	JJASO	-	-	-	Jul-Sep		
20	Common eider		Up To 4,500 Birds	Concentration Area	AMJJASON	Jun-Oct	Apr-Jun	Oct-Nov	Jun-Jul		
							•	OCI-NOV	Juli-Jul		
	Glaucous gull		Up To 29,696 Birds	Concentration Area	AMJJASON	Jul-Aug	- ^				
	King eider		Up To 2,500 Birds	Concentration Area	AMJJASON	-	Apr-Jul	Oct-Nov	Jun-Sep		
	Long-tailed duck		Up To 70,000 Birds	Concentration Area	AMJJASON	May-Aug	Apr-May	Oct-Nov	Jun-Aug		
	Spectacled eider	T	100S	Concentration Area	MJJASON	May-Aug	May-Jun	Oct-Nov	Jun-Sep		
	Steller's eider	Т	10S	Concentration Area	JJASO	Jun-Aug	Jun-Oct	-	Jun-Oct		
	Surf scoter		Up To 4,000 Birds	Concentration Area	MJJASON	-	-	-	Jul-Aug		
	White-winged scoter		100S	Concentration Area	MJJASO	-	-	-	-		
32	Ancient murrelet		100S	General Distribution	JASO	_	_	-	-		
02	Black guillemot		100S	General Distribution	AMJJASON	-	-	-			
	•										
	Crested auklet		1,000S	General Distribution	JJASO	-	Aug-Oct	-	Jun-Oct		
	Horned puffin		100S	General Distribution	J J A S O	-	Jun-Jun	Sep-Oct	-		
	Ivory gull		10S	General Distribution	AMJJASON	-	Apr-May	Sep-Nov	-		
	Kittlitz's murrelet		100S	General Distribution	JJASON	-	-	-	-		
	Least auklet		1,000S	General Distribution	MAMJJASON	-	Mar-Nov	-	Jun-Oct		
	Long-tailed jaeger		100S	General Distribution	MJJASO	-	-	-	-		
	Loons		100S	General Distribution	AMJJASON	_	_	-	-		
	Northern fulmar		1,000S	General Distribution	JJASON	_	_	-	_		
	Parakeet auklet		100S	General Distribution	MAMJJASON		Mar-May		lun Nov		
						-	•	Aug-Nov	Jun-Nov		
	Ross's gull		100S	General Distribution	J SON	-	Jun-Jun	Sep-Nov	-		
	Short-tailed shearwater		1,000S	General Distribution	AMJJASO	-	Apr-May	Sep-Oct	May-Sep		
	Tufted puffin		100S	General Distribution	F M A M S O N D	-	Feb-May	Sep-Dec	-		
ISH:											
RAR#	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Spav	vnina	Eggs	Larvae	Juveniles	Adults
	• •			General Distribution	J F M A M J J A S O N D	•					Jan-De
7	Arctic cod		-			Dec-Mar	-	Aug-Sep	Aug-Sep	Jan-Dec	
	Bering flounder		-	General Distribution	J F M A M J J A S O N D	-	-	Aug-Aug	Aug-Aug	Jan-Dec	Jan-De
	Greenland halibut (turbot)		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	Jan-Dec	Jan-Dec
	Pacific cod		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	-	-
	Pacific sand lance		-	General Distribution	J F M A M J J A S O N D	-	-	-	Aug-Sep	Jan-Dec	Jan-De
	Walleye pollock		-	General Distribution	J F M A M J J A S O N D	-	-	Sep-Sep	Sep-Sep	Jan-Dec	Jan-De
17	Capelin		-	General Distribution	J F M A M J J A S O N D	-	-	-	Sep-Sep	Jan-Dec	Jan-De
	Yellowfin sole		-	General Distribution	J F M A M J J A S O N D	-	-	_	Sep-Sep	Jan-Dec	Jan-De
33	Pacific herring		_	General Distribution	J F M A M J J A S O N D	-	-	_		Jan-Dec	Jan-De
	Chum salmon			General Distribution	J F M A M J J A S O N D	-	_			Jan-Dec	Jan-De
30			-			-	-	-	-		
	Pink salmon Saffron cod		-	General Distribution General Distribution	J F M A M J J A S O N D J F M A M J J A S O N D	-	-	-	-	Jul-Dec Jan-Dec	Jan-De Jan-De
				General Distribution						Odii-Dec	oan-be
NVE	RTEBRATE:										
RAR#	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Spav	vning	Eggs	Larvae	Juveniles	Adults
	Snow crab		-	General Distribution	J F M A M J J A S O N D	-	- -	<u></u>	-	-	
				Diotribution							
	NE MAMMAL:		<b>.</b>		NA (1) 5 =		<b>6</b>	Б.			
KAR#	Species	S F	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Mating	Calving	Pupping	Molting		
3	Beluga whale		Feeding	Vulnerable Occurrence	JASO	-	-	_	-		
	Beluga whale		Migratory Route	Migration	A M N	-	-	-	-		
	Bowhead whale	Е	Migratory Route	Migration	A M	-	_	_			
	Bowhead whale	E	Migratory Route	Migration	ASO						
12				-		-	-	-	_		
40	Bowhead whale	E	Reproductive/Feeding	Vulnerable Occurrence General Distribution	J A S O D J A S O N D	A 14	-	- M M	_		
	D 11 1			Conoral Distribution		Apr-May	-	Mar-May	Apr-Jul		
16	Bearded seal	T -	-					a. may	•		
16 34	Bearded seal Polar bear Ringed seal	T T	- -	General Distribution General Distribution	J F M A M J J O N D J F M A M J J A S O N D	- Apr-May	-	- Mar-Jun	- May-Jul		



#### Biology Map 14 Arctic Alaska Offshore ESI

Chukchi and Beaufort Seas





#### SEE MAP DATA TABLE

for Status, Seasonality, and Breed information about mapped species. Published: December 2023

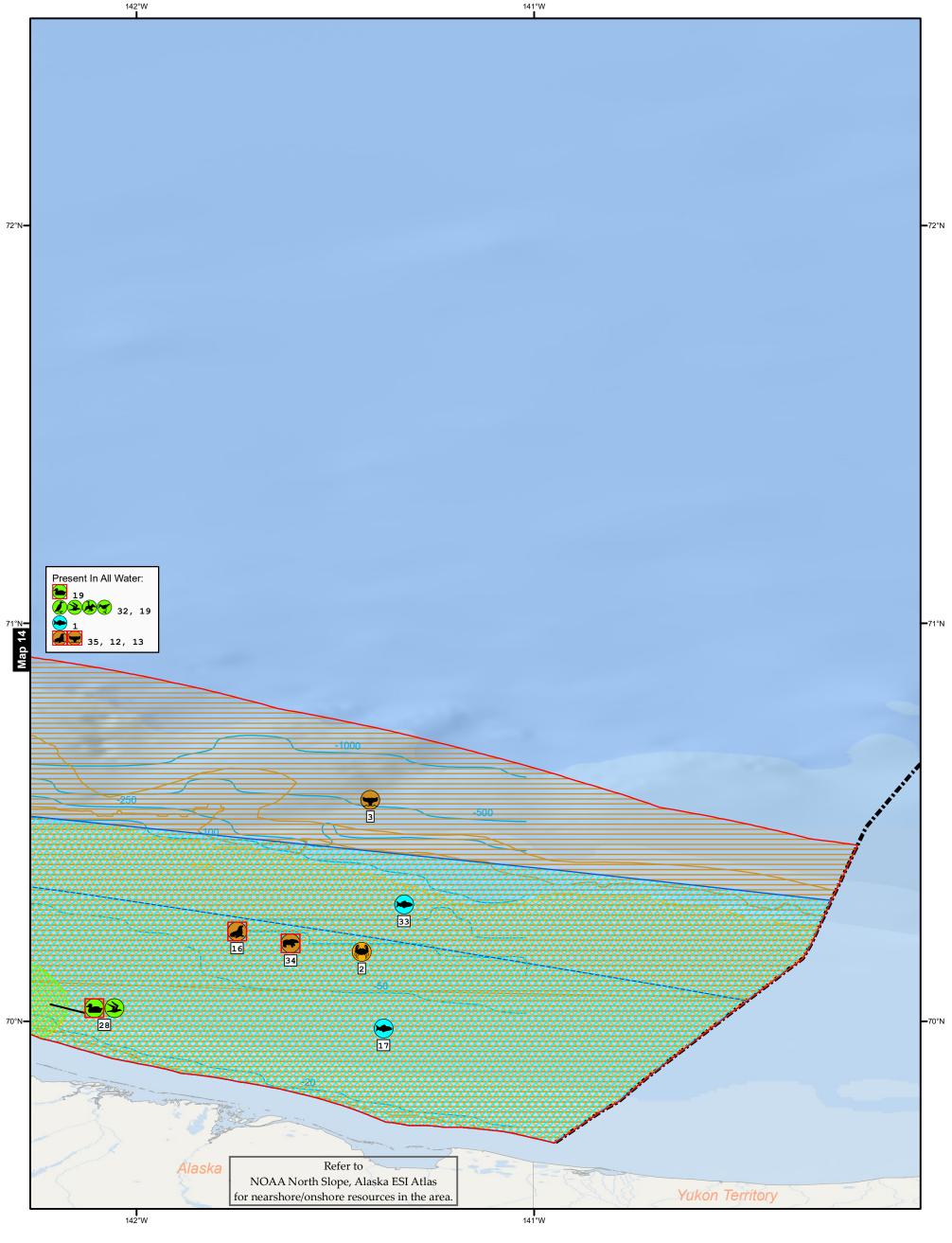


10 11 12 13 14 15

Alaska

# Arctic Alaska Offshore ESI: Biology Map 14 BIOLOGICAL RESOURCES:

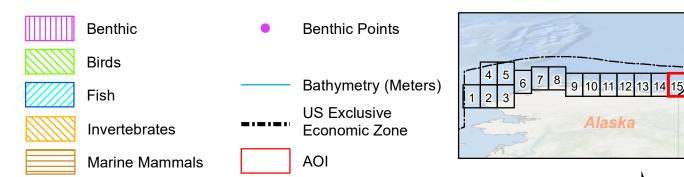
RAR#	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Nesting	Migr	ating	Molting		
	Arctic tern		100S	General Distribution	MJJASO						
13	Black-legged kittiwake		10,000S	General Distribution	MJJASON	<u>-</u>		_	-		
			,			-	A I	O-4 N	- lean leaf		
	Common eider		10S	General Distribution	AMJJASON	-	Apr-Jun	Oct-Nov	Jun-Jul		
	Common murre		1,000S	General Distribution	JJASO	-	-	-	Sep-Oct		
	Glaucous-winged gull		100S	General Distribution	MJJASO	-	-	-	-		
	Glaucous gull		1,000S	General Distribution	AMJJASON	-	-	-	-		
	King eider		100S	General Distribution	AMJJASON	-	Apr-Jul	Oct-Nov	Jun-Sep		
	Long-tailed duck		100S	General Distribution	JJAS	-	7 tpr our	-	Jun-Sep		
							-		•		
	Pacific Ioon		100S	General Distribution	MJJASO	-	Jun-Sep	-	-		
	Parasitic jaeger		100S	General Distribution	MJJASO	-	-	-	-		
	Pomarine jaeger		100S	General Distribution	MJJASO	-	-	-	-		
	Red-necked phalarope		100S	General Distribution	MJJASO	-	-	-	-		
	Red phalarope		100S	General Distribution	MJJASON	-	May-Nov	-	Aug-Sep		
	•						May-140V		Aug-Sep		
	Sabine's gull		100S	General Distribution	MJJASO	-	-	-	-		
	Spectacled eider	Т	100S	General Distribution	MJJASON	-	May-Jun	Oct-Nov	Jun-Sep		
	Steller's eider	Т	10S	General Distribution	MJJASO	-	May-Oct	-	Jun-Oct		
	Thick-billed murre		1,000S	General Distribution	MJJASON	-	Jul-Sep	-	Aug-Nov		
	White-winged scoter		108	General Distribution	MJJASO	-	-	-	-		
20	•		Up To 100 Birds				_		lul Con		
28	Black scoter		•	Concentration Area	JJASO	-	-	-	Jul-Sep		
	Common eider		Up To 4,500 Birds	Concentration Area	AMJJASON	Jun-Oct	Apr-Jun	Oct-Nov	Jun-Jul		
	Glaucous gull		Up To 29,696 Birds	Concentration Area	AMJJASON	Jul-Aug	-	-	-		
	King eider		Up To 2,500 Birds	Concentration Area	AMJJASON	-	Apr-Jul	Oct-Nov	Jun-Sep		
	Long-tailed duck		Up To 70,000 Birds	Concentration Area	AMJJASON	May-Aug	Apr-May	Oct-Nov	Jun-Aug		
	•	Т	100S	Concentration Area		, ,					
	Spectacled eider				MJJASON	May-Aug	May-Jun	Oct-Nov	Jun-Sep		
	Steller's eider	T	10S	Concentration Area	J J A S O	Jun-Aug	Jun-Oct	-	Jun-Oct		
	Surf scoter		Up To 4,000 Birds	Concentration Area	MJJASON	-	-	-	Jul-Aug		
	White-winged scoter		100S	Concentration Area	MJJASO	-	-	-	_		
32	Ancient murrelet		100S	General Distribution	JASO	-	-	-	_		
	Black guillemot		100S	General Distribution	AMJJASON	_					
							-	-	-		
	Crested auklet		1,000S	General Distribution	J J A S O	-	Aug-Oct	-	Jun-Oct		
	Horned puffin		100S	General Distribution	JJASO	-	Jun-Jun	Sep-Oct	-		
	Ivory gull		10S	General Distribution	AMJJASON	-	Apr-May	Sep-Nov	-		
	Kittlitz's murrelet		100S	General Distribution	JJASON	-	-	-	-		
	Least auklet		1,000S	General Distribution	MAMJJASON	_	Mar-Nov	-	Jun-Oct		
						-	IVIAI-INOV	-	Juli-Oct		
	Long-tailed jaeger		100S	General Distribution	M J J A S O	-	-	-	-		
	Loons		100S	General Distribution	AMJJASON	-	-	-	-		
	Northern fulmar		1,000S	General Distribution	JJASON	-	-	-	-		
	Parakeet auklet		100S	General Distribution	MAMJJASON	-	Mar-May	Aug-Nov	Jun-Nov		
	Ross's gull		100S	General Distribution	J SON	-	Jun-Jun	Sep-Nov	_		
					AMJJASO			•	May Can		
	Short-tailed shearwater		1,000S	General Distribution		-	Apr-May	Sep-Oct	May-Sep		
	Tufted puffin		100S	General Distribution	F M A M S O N D	-	Feb-May	Sep-Dec	-		
SH:											
AR#	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Spaw	ning	Eggs	Larvae	Juveniles	Adu
	Arctic cod					•	_				
1			-	General Distribution	J F M A M J J A S O N D	Dec-Mar	-	Aug-Sep	Aug-Sep	Jan-Dec	Jan-D
	Bering flounder		-	General Distribution	J F M A M J J A S O N D	-	-	Aug-Aug	Aug-Aug	Jan-Dec	Jan-D
	Greenland halibut (turbot)		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	Jan-Dec	Jan-D
	Pacific cod		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	-	-
	Pacific sand lance		-	General Distribution	J F M A M J J A S O N D	-	-	_	Aug-Sep	Jan-Dec	Jan-D
				General Distribution	J F M A M J J A S O N D				Sep-Sep		Jan-D
	Walleye pollock		-			-	-	Sep-Sep		Jan-Dec	
17	Capelin		-	General Distribution	J F M A M J J A S O N D	-	-	-	Sep-Sep	Jan-Dec	Jan-D
	Yellowfin sole		-	General Distribution	J F M A M J J A S O N D	-	-	-	Sep-Sep	Jan-Dec	Jan-D
33	Pacific herring		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	Jan-Dec	Jan-D
IVE	RTEBRATE:										
AR#	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Spav	nina	Eggs	Larvae	Juveniles	Adul
	•		Concontinuon	11 9	J F M A M J J A S O N D	Оран	·······g	Lggo	<u> Lui vuo</u>	<u> </u>	7 (44)
2	Snow crab		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	-	-
IARI	NE MAMMAL:										
	Species	S F	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Mating	Calving	Pupping	Molting		
	•	J F						- Fupping	would		
	Beluga whale	-	Feeding	Vulnerable Occurrence	JASO	-	-		-		
	Bowhead whale	E	Migratory Route	Migration	ASO	-	-	-	-		
	Bowhead whale	E	Reproductive/Feeding	Vulnerable Occurrence	JASO	-	-	-	-		
	Bonnoad midio				LEMANILACOND	A N 4		Mar May	A 1.1		
13	Bearded seal	Т	-	General Distribution	J F M A M J J A S O N D	Apr-May	-	Mar-May	Apr-Jul		
13 16	Bearded seal		-			Apr-iviay -	-	iviai-iviay -	Apr-Jul -		
13 16 34		T T T	- -	General Distribution General Distribution General Distribution	J F M A M J J A S O N D  J F M A M J J A S O N D	Apr-iviay - Apr-May	-	•	Apr-Jul - May-Jul		



#### Biology Map 15 Arctic Alaska Offshore ESI

Chukchi and Beaufort Seas





#### SEE MAP DATA TABLE

# Arctic Alaska Offshore ESI: Biology Map 15 BIOLOGICAL RESOURCES:

BI CC CC GG GI Ki LC Pr Pr Rr Rr Ss	Arctic tern Black-legged kittiwake Common eider	SF	Concentration 100S	Mapping Qualifier	Monthly Presence (Jan-Dec)	Nesting	Migr	ating	Molting		
BI CC CC GG GI Ki LC Pr Pr Rr Rr Ss	Black-legged kittiwake Common eider		1008								
BI CC CC GG GI Ki LC Pr Pr Rr Rr Ss	Black-legged kittiwake Common eider			General Distribution	MJJASO	_	_	_	_		
CC CC GG GG Ki Lc Pr Pr Rr Rr Ss	Common eider		10,000S	General Distribution	MJJASON	-		_	-		
Cc G G Ki Lc Pr Pr Rr Rr Ss			,			-	A I	O-4 N	- lana lad		
G G Ki Lc Pr Pr Rr Rr Si Si			10S	General Distribution	AMJJASON	-	Apr-Jun	Oct-Nov	Jun-Jul		
G Ki Lc Pi Pi Ri Ri Si Si	Common murre		1,000S	General Distribution	JJASO	-	-	-	Sep-Oct		
Ki Lc Pi Pi Pi Ri Ri Si Si	Glaucous-winged gull		100S	General Distribution	MJJASO	-	-	-	-		
Lo Pi Pi Pi Ri Ri Si Si	Blaucous gull		1,000S	General Distribution	AMJJASON	-	-	-	-		
Lo Pa Pa Pa Ra Ra Sa Sp St	King eider		1008	General Distribution	AMJJASON	-	Apr-Jul	Oct-Nov	Jun-Sep		
Pa Pa Pa Ra Ra Sa Sa Sa	ong-tailed duck		100S	General Distribution	JJAS	_	7 tpr our	-	Jun-Sep		
Pa Po Ro Ro Sa Sp St							-		•		
Pri Rr Rr Si Si St	Pacific loon		100S	General Distribution	MJJASO	-	Jun-Sep	-	-		
Ri Ri Si Sp St	Parasitic jaeger		100S	General Distribution	MJJASO	-	-	-	-		
Ri Si St	omarine jaeger		100S	General Distribution	MJJASO	-	-	-	-		
Ri Si Si	Red-necked phalarope		100S	General Distribution	MJJASO	-	-	-	-		
Sa Sp St	Red phalarope		100S	General Distribution	MJJASON	-	May-Nov	-	Aug-Sep		
S <sub>I</sub> St							May-140V		Aug-Sep		
St	Sabine's gull		100S	General Distribution	MJJASO	-	-	-	-		
	Spectacled eider	Т	100S	General Distribution	MJJASON	-	May-Jun	Oct-Nov	Jun-Sep		
	Steller's eider	Т	10S	General Distribution	MJJASO	-	May-Oct	-	Jun-Oct		
T/	hick-billed murre		1,000S	General Distribution	MJJASON	-	Jul-Sep	-	Aug-Nov		
	Vhite-winged scoter		108	General Distribution	MJJASO	-	-	-	-		
	U		Up To 100 Birds				_		lul Con		
	Black scoter		·	Concentration Area	JJASO	-	-	-	Jul-Sep		
	Common eider		Up To 4,500 Birds	Concentration Area	AMJJASON	Jun-Oct	Apr-Jun	Oct-Nov	Jun-Jul		
G	Glaucous gull		Up To 29,696 Birds	Concentration Area	AMJJASON	Jul-Aug	-	-	-		
K	ling eider		Up To 2,500 Birds	Concentration Area	AMJJASON	-	Apr-Jul	Oct-Nov	Jun-Sep		
	ong-tailed duck		Up To 70,000 Birds	Concentration Area	AMJJASON	May-Aug	Apr-May	Oct-Nov	Jun-Aug		
		Т	100S	Concentration Area		May-Aug					
	Spectacled eider				MJJASON	, ,	May-Jun	Oct-Nov	Jun-Sep		
	Steller's eider	T	10S	Concentration Area	J J A S O	Jun-Aug	Jun-Oct	-	Jun-Oct		
Si	Surf scoter		Up To 4,000 Birds	Concentration Area	MJJASON	-	-	-	Jul-Aug		
W	Vhite-winged scoter		100S	Concentration Area	MJJASO	-	-	-	-		
	Ancient murrelet		100S	General Distribution	JASO	_	-	-	_		
	Black guillemot		100S	General Distribution	AMJJASON	_					
	-						-	-			
	Crested auklet		1,000S	General Distribution	J J A S O	-	Aug-Oct	-	Jun-Oct		
H	lorned puffin		100S	General Distribution	JJASO	-	Jun-Jun	Sep-Oct	-		
lv	vory gull		10S	General Distribution	AMJJASON	-	Apr-May	Sep-Nov	-		
K	(ittlitz's murrelet		100S	General Distribution	JJASON	-	-	-	-		
	east auklet		1,000S	General Distribution	MAMJJASON	_	Mar-Nov		Jun-Oct		
						-	Iviai-INOV	-	Juli-Oct		
	ong-tailed jaeger		100S	General Distribution	M J J A S O	-	-	-	-		
Lo	oons.		100S	General Distribution	AMJJASON	-	-	-	-		
N.	lorthern fulmar		1,000S	General Distribution	JJASON	-	-	-	-		
P	Parakeet auklet		100S	General Distribution	MAMJJASON	-	Mar-May	Aug-Nov	Jun-Nov		
R	Ross's gull		100S	General Distribution	J SON	-	Jun-Jun	Sep-Nov	_		
	•				AMJJASO	_		•	May Can		
	Short-tailed shearwater		1,000S	General Distribution		-	Apr-May	Sep-Oct	May-Sep		
Τι	ufted puffin		100S	General Distribution	F M A M S O N D	-	Feb-May	Sep-Dec	-		
<b></b>											
SH:											
AR# S	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Spaw	ning	Eggs	Larvae	Juveniles	Adu
	•					•	_			-	
	arctic cod		-	General Distribution	J F M A M J J A S O N D	Dec-Mar	-	Aug-Sep	Aug-Sep	Jan-Dec	Jan-E
	Bering flounder		-	General Distribution	J F M A M J J A S O N D	-	-	Aug-Aug	Aug-Aug	Jan-Dec	Jan-[
G	Greenland halibut (turbot)		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	Jan-Dec	Jan-[
P	Pacific cod		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	-	
	Pacific sand lance		-	General Distribution	J F M A M J J A S O N D	_	-	_	Aug-Sep	Jan-Dec	Jan-[
				General Distribution	J F M A M J J A S O N D				Sep-Sep		Jan-I
	Valleye pollock		-			-	-	Sep-Sep		Jan-Dec	
17 Ca	•		-	General Distribution	J F M A M J J A S O N D	-	-	-	Sep-Sep	Jan-Dec	Jan-l
Y	'ellowfin sole		-	General Distribution	J F M A M J J A S O N D	-	-	-	Sep-Sep	Jan-Dec	Jan-[
33 Pa	Pacific herring		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	Jan-Dec	Jan-[
VERT	TEBRATE:										
AR# S	Species	SF	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Spaw	nina	Eggs	Larvae	Juveniles	Adu
	•		Concontiduon	11 9		Opan	·······g		Laivao	<u> </u>	7144
∠ Si	Snow crab		-	General Distribution	J F M A M J J A S O N D	-	-	-	-	-	
ARIN	E MAMMAL:										
	Species	S F	Concentration	Mapping Qualifier	Monthly Presence (Jan-Dec)	Mating	Calving	Dunning	Molting		
	•	ЗΓ						Pupping	wolling		
^ -	Beluga whale	_	Feeding	Vulnerable Occurrence	JASO	-	-	-	-		
	Bowhead whale	Е	Migratory Route	Migration	ASO	-	-	-	-		
	Bowhead whale	E	Reproductive/Feeding	Vulnerable Occurrence	JASO	-	-	-	-		
12 Bo	Bearded seal	Т	-	General Distribution	J F M A M J J A S O N D	Apr-May	_	Mar-May	Apr-Jul		
12 Bo	Polar bear	T	-	General Distribution	J F M A M J J O N D	-	-				
12 Bo 13 Bo 16 Be				Octional Distribution	O IVI A IVI O O O IVI D	_	-	_	_		